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## THE PHYSIOLOGIC APPROACH TO OTOLARYNGOLOGY

CHAIRMAN'S ADDRESS

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The great progress that has come to the specialty of otolaryngology in America during the past fifty years makes it profitable to take account of the stages by which this advance has been achieved. The exactions of professional education and the demands of a busy practice not infrequently prevent one from following collateral lines of medical reading and may interfere with one's awareness of the discoveries which may—not now perhaps, but later—become the foundations of an increasingly valuable system of diagnosis and therapeutics.

It is of course much easier to follow remembered routine from special internships or from intensive courses of study, without bothering to add thereto anything save some highly touted medicament or impressive bit of apparatus recommended by pharmaceutical detail men or pseudomedical advertising magazines. Careful tests by the Council on Physical Therapy and the Council on Pharmacy and Chemistry are available for all such matters, and some of us might be saved eventual embarrassment by resort to their records, before rushing into print in praise of therapeutic methods that are based on special financial returns to certain manufacturers or promoters. Empiricism, whether based on laziness or on credulity, has never spelled progress. "Such intemperate promises readily insinuate themselves into the minds of youth, who, ignoring the many almost unconquerable difficulties lying ahead, proceed with bold independence and then find themselves in difficulties, to the prejudice of their own reputations and of the health of others"; thus wrote Antonio Scarpa, surgeon-anatomist, 135 years ago.

Perhaps some may more readily accept such hearsay evidence because most of us, as otolaryngologists, are graduates of the school of anatomic rather than pathologic or physiologic research; and on such anatomic foundations have been built splendid surgical knowledge and incomparable refinements of technic.

Scientific method, however, would include accurate determination of the physiologic data respecting each branch of our specialty, and of the resultant pathologic changes. We have perhaps been sent on a detour by the insistence of our confrères the internists for eradication of focal infection.

We have shared enthusiasm and disillusion respecting bacterial infestations, opsonins, toxins, resistance, vaccines, and the like. On the basis of known values established in the cure of deficiency diseases with otorhinologic complications, elaborate dietary systems and biochemical indexes have been set up for easy clinical application to all sorts of cases; and here disappointment has often followed. Too rarely are our most expert clinicians well grounded in otolaryngologic histopathology, a defect rapidly being remedied in graduate teaching.

The physiologic approach to otolaryngology was for many years a matter of measurement of motor or sensory functions—hearing and vestibular tests, olfactometry, vocal cord movements, nasal air capacity and currents and the like, all valuable clinical indexes, based however on gross phenomena. Of recent years, with the collaboration of highly trained histopathologists, biochemists, physiologists and endocrinologists, many important contributions to the physiology of our specialty have appeared.

Experimental observations, begun with frogs, rabbits, dogs and cats, carried on with monkeys and eventually demonstrated in man, have extended our knowledge of the cellular activities of normal and diseased ciliated membranes and have explained the growth, destruction and regeneration of these structures. Vital staining has had an important rôle in this study, as also on the revaluation of the problems of pneumatization of the temporal bone and of osteogenesis following osteomyelitis. The fibrogenic powers of phagocytic connective cells have been demonstrated.

Artificial sinus infections have been studied to disclose the etiology of cyst and abscess formations, of osteomyelitis of the frontal sinus, of epidural abscess. Nasal mucus has yielded up its protective content of lysozyme, and its normal immune powers have been enhanced by astringent applications. Viruses within this secretion have been isolated, vitally cultivated, and preserved while transported from Point Barrow to New York, and routes of other viruses into the central nervous system along the olfactory sheaths have been discovered.

In otology, mensuration of cochlear function has been carried into the eighth nerve, tone by tone, through electrical amplification. The ossicular muscles have been studied under the dissection microscope and their specific responses to sound stimuli accurately reported. From the vestibular system, six separate pathways for forced movements have been worked out, and the complex anatomy of the cerebellum has been unraveled through careful study of its developing tracts in the lowest vertebrates. The use of human immune serum instead of vaccines, and of transfusion instead of jugular ligation, has offered hope in recent otologic practice, in meningitis and in sinus thrombosis.



Causing the vibrating vocal cords to stand still on a given note through stroboscopy now affords accurate analysis of vocal faults and incipient paralysis. Far more valuable clinically was the mapping and identification of the bronchial end-organs and innervations concerned in coughing. Study of the pathology of atelectasis, of bronchiectasis, of silicosis, of pulmonary malignancy, has been worked out under the bronchoscope. Perhaps similar interpretation of increased fibrosis and glandular proliferation low in the esophagus may be reached by esophagoscopy study.

Dr. Mosher twelve years ago set up several unsolved problems for otolaryngology. The problem of meningitis may yet be managed through better understanding of brain physiology. That mucous membranes contain phagocytic mesenchymal cells which develop into fibroblasts explains connective tissue formation in deaf ears but doesn't get rid of it. Radiation effects in malignancy have been carefully reported. Death of lymphocytes with release of their contained immune substances and intruding of phagocytes is a constant finding after irradiation of low intensity. The tonsil problem, also, receives a physiologic rather than a surgical interpretation at present. Epidemiologists have definitely incriminated the nose as a portal of infection for the so-called virus diseases. Such in brief are some physiologic answers to the "unfinished business" of 1924.

Here are some new problems recently propounded: Are the viruses, known already to be transmissible, possible of isolation as crystallizable protein compounds? Are these nonliving compounds needed catalyzers to permit bacterial invasion? What is the nature of allergic sensitivity and how may it act within the central nervous system, notably of the vestibular end-organs and the basal cisternae? How often are migraine and vertigo allergic? What is the biochemistry of endocrine products as applied to otosclerosis, to asthma and to mucosal edema? Is the body's resistance to infection based on its oxygen intake? How may we solve the problem of lymphatic drainage from the sinuses? What is the exciting factor in carcinoma?

It will be seen that some of these matters depend on the autonomic nervous system, on which, as on the sinuses in years past, many surgical attacks are now being made. But the physiology of this great system is far from clear, and its ramifications are infinitely difficult in our special field.

Knowledge of the fundamentals of otolaryngologic physiology, interrelating various new discoveries and applying them to our field, will not teach us anything about surgical indications or surgical technic. But it may lead to a better understanding of the need for surgery and will be of great help in the application of modernized principles of immunity for the prophylaxis of disease of the upper respiratory tract.

Mosher once said "There is no pleasure so great as having your little try at the solution of some medical problem. . . . Support or no support, research work has been done for years on the side, as it were, and probably always to a certain extent will be done in this way. You and I have so done it. Better men than we will do the same. The urge to do it has come down the ages. . . . The worker is not to be pitied. Rather he is to be envied, because . . . the world of medicine becomes for him a world of romance."

Given such leaders and such inspiration, otolaryngology in America will continue its progress, through insistence on higher standards of individual preparation, and greater interest by individuals thus prepared

in the physiologic relationship of our special field to the various systems of the body as a whole. Team work with other members of hospital staffs often points to the way to interesting bits of research. Each one among us, however far away from others in the specialty, should feel that he is a collaborator, through his reading and his papers before local medical groups, in the task of appraising the general profession that we are not immediately bent on drastic surgery but that we are building, through physiologic and pathologic knowledge, a sound foundation for the medical and surgical otolaryngology of the future.

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## THE INCREASED METABOLISM OF OBESITY

### USE AND ABUSE OF METABOLIC STIMULANTS

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The title of this article was chosen to focus attention on the fact that with increasing weight there is concomitantly an increasing total resting metabolism. That is, a person produces more heat when overweight than at normal weight. For instance, in the individual at normal weight under basal conditions heat is being produced at a certain rate per unit of surface area. When the same person increases his weight, for example by 50 per cent, the surface area is also increased to accommodate this additional fat. If the heat production per unit of surface area is the same in the two instances, the total heat production in the obese state is obviously greater.

This relationship between weight and total metabolism has long been known<sup>1</sup> but has been obscured by the emphasis that has been placed on basal metabolism to the exclusion of the total. Evans and Strang<sup>2</sup> Du Bois<sup>3</sup> and Newburgh<sup>4</sup> have recently called attention to the importance of giving heed to the total metabolism.

Basal metabolism as usually reported is the heat production per unit of body surface per unit of time (calories per square meter per hour), whereas total metabolism (total heat production) is the heat production of the organism as a whole per unit of time (total calories per hour), both measurements taken at complete rest. The basal metabolism is customarily expressed in terms of percentage above or below an average normal established for an individual of the same sex-age incidence. The total resting metabolism is likewise expressed in this article in percentage above or below an assumed normal.

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The authors are indebted to Mr. Arthur Gallagher and Mr. Samuel Member for assistance in compilation of the data and preparation of the charts.

1. Harris, J. A., and Benedict, F. G.: A Biometric Study of Basal Metabolism in Man, Carnegie Institution of Washington, 1919.

2. Strang, J. M., and Evans, F. A.: The Energy Exchange in Obesity, *J. Clin. Investigation* 6: 277 (Oct.) 1928.

3. Du Bois, E. F.: Total Energy Exchange in Relation to Clinical Medicine, *Bull. New York Acad. Med.* 9: 680 (Dec.) 1933.

4. Newburgh, L. H.: The Importance of Actually Measuring the Total Heat Production, *Arch. Int. Med.* 8: 459 (Oct.) 1934.

The question may be asked, Why does surface area enter into the calculation? Why is basal metabolism expressed as calories per unit of surface area instead of for the total surface area? Because empirically a close relationship has been discovered between surface area and vital protoplasmic mass. The volume of such

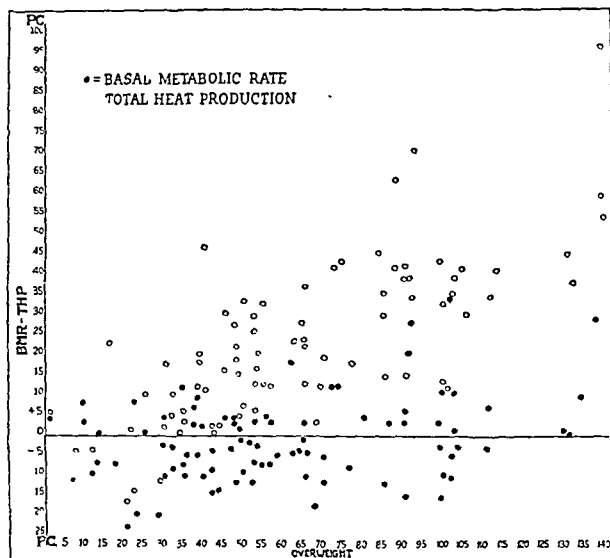


Chart 1.—Basal metabolic rate (calories per square meter per hour) and resting total heat production (total calories per hour) in overweight. Both are expressed in percentage above or below the theoretical normal.

protoplasmic mass can be estimated from the surface area and thus, since surface area represents protoplasmic mass, definite comparisons are possible between heat outputs per unit of surface area of different individuals.

Such a relationship between heat producing protoplasmic tissue and surface area thus constitutes a valid basis for comparison of metabolic rates when weights (and surface areas) are within normal limits. When some abnormal accumulations such as water or fat occur, an expression of the basal metabolism as calories per unit of body surface does not give a true picture of the total metabolism or of the rate of energy exchange in the vital heat-producing body tissue cells. Since such accumulations are relatively inert<sup>5</sup> and not direct heat producers, they might be regarded as parasitic in that they derive their heat largely from functioning muscle and gland protoplasm. Nevertheless they increase the total body surface area. The calories per unit of surface area (the basal metabolism) can remain normal (as is usually the case in fat accumulations) and yet the total heat output be greatly increased over what it would be at normal weight.

5. To demonstrate that fat tissue takes little of body heat, we carried out the following experiment on this question: A long needle with a thermocouple was introduced through a thick layer of fat in the gluteal regions of obese individuals. The temperatures were recorded by means of an electrical recording apparatus. It was found that the lowest temperature was just beneath the skin and that the temperature gradually rose as the muscle was approached. A sudden abrupt elevation to the usual body temperature was finally noted and was assumed to be at the point of entry of the thermocouple into the muscle.

#### METHOD OF STUDY

Determinations of metabolic rates were done by the gas analysis method in the respiration laboratory of Dr. C. V. Bailey, the Du Bois standards being used.

The total calories per hour of the obese subjects at rest were compared with the established normal standards for an individual of the same sex and age having normal weight and surface area.

The theoretical normal of total calories per hour for an individual was determined by multiplying his normal number of calories per square meter per hour (Du Bois standards) by his square meters of surface area if he were at normal weight. The assumed normal weight was obtained from insurance charts with due consideration of sex, age, height and frame. From the height and normal weight, the normal surface area was obtained by nomogram.

In obese individuals the resting total heat production is almost always above normal. The greater the percentage of overweight, the greater is the percentage elevation of the resting total metabolism.

#### RESULTS OF STUDY

Chart 1 is a graphic representation of the basal metabolic rate and resting total heat production in ninety-nine overweight patients. The ordinate represents the percentage of metabolism above or below normal, while the abscissa represents the percentage of overweight. It will be noted that the overweight cases range from normal to 135 per cent above normal. In the lower overweight percentages the majority of the basal metabolic rates are below normal, whereas in the more marked cases higher rates prevail. This upward

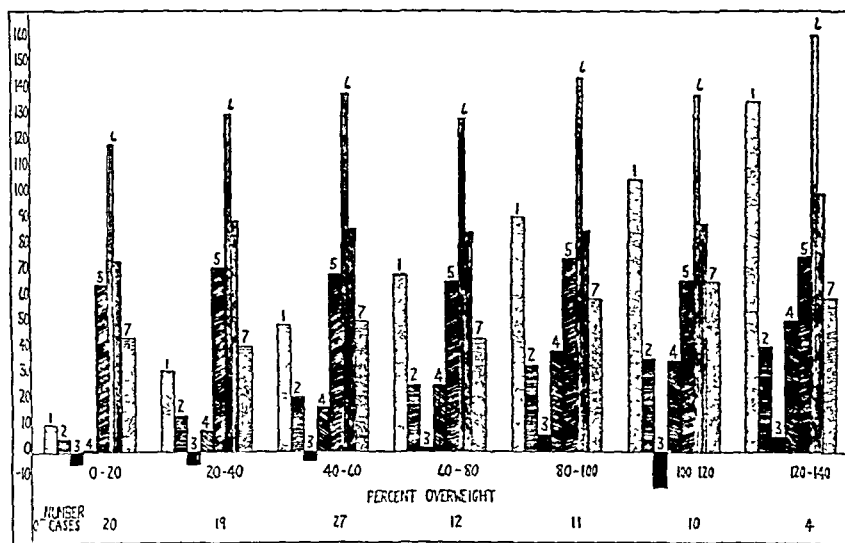


Chart 2.—Percentage increase of surface area and total heat production that accompanies increasing overweight. Note also the upward trend of the basal metabolic rate and the blood pressure with increasing obesity. 1. Per cent overweight. 2. Surface area. 3. Basal metabolic rate. 4. Total heat production. 5. Basal pulse. 6. Blood pressure. 7. Pulse pressure.

trend of metabolism is much more noticeable in the total heat production. In all cases presenting 20 per cent and more of excess weight, the average percentage of overweight was 62, of basal metabolism + 1 and of the total heat production + 22.5.

A further attempt to show trends is represented in chart 2. In each group of columns is expressed the average percentage of overweight and of increase of surface area, basal metabolic rate, resting total heat

production, basal pulse rate, blood pressure and pulse pressure. These data are averaged for groups of 20 per cent of overweight (i. e., 0-20, 20-40, 40-60, and so on). Averages of overweight increase progressively from 11 per cent in the first group to 136 in the last. The average basal metabolism shows an upward trend from minus 4.5 in the first group to plus 5.5 in the last. A decided exception is seen in the 100 to 120 per cent overweight group, in which the average basal metabo-

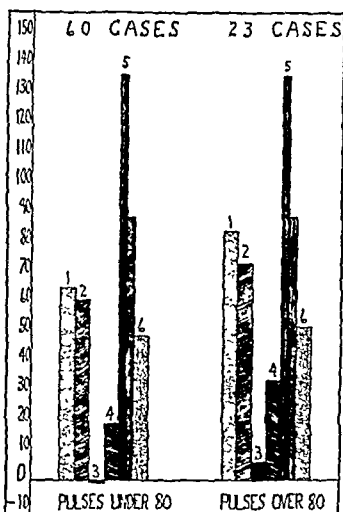


Chart 3.—Cases grouped according to basal pulse rates: group 1, in which averages of pulses were below 80; group 2, in which averages of pulses were above 80. 1. Pulse. 2. Per cent overweight. 3. Basal metabolic rate. 4. Total heat production. 5. Blood pressure. 6. Pulse pressure.

this chart reveal nothing of moment, although a possible significance of the pulse rate is suggested in chart 3.

Since an increased pulse rate is the most constant finding in increased metabolism, eighty-three cases in excess of 20 per cent overweight were divided into two groups, those with resting pulse rates of less than 80 and those with rates over 80. The average pulse, percentage overweight, basal metabolic rate, total heat pro-

duction, basal pulse rate, blood pressure and pulse pressure. This group contained ten patients, of whom three had plus basal and seven had distinctly diminished rates. So definite is the upward trend of the basal metabolism with increasing overweight, however, that we feel confident that a larger series of cases in this group would average well above the normal.

The surface areas and resting total heat productions show the expected increase with progressive overweight. There is a definite increase in the blood pressures and pulse pressures in the higher ranges of overweight.

Average pulse rates on

#### THEORETICAL CONSIDERATIONS

It is evident from the foregoing that in obesity there is an increase in the total metabolism. Since fat is comparatively inert, this increased heat production must be brought about by an increased activity of the muscle and gland tissues of the body. Apparently the muscle and gland cells are stimulated to a higher rate of oxidation with an increase of heat and energy production. It is impossible to state the extent to which the fat tissue participates in this increased activity but it is probably only to a relatively small degree. Other things being equal, the increase of heat production is directly proportional to the increase of surface area. Conversely, a reduction in weight brings about a reduction of resting total metabolism in direct proportion to the reduction of surface area. This is well illustrated in the accompanying table (patient M. S.). It should also be noted that all cases showed a reduction of total heat production following a reduction in weight.

We do not maintain that the exact percentage of fat in the body can be determined by the methods employed; the excess weight percentages are but approximate at best. The same must be said for surface area estimations as ordinarily determined from nomograms and consequently for figures used to express basal metabolic rates and relative total heat productions.

It has been shown<sup>6</sup> that weight reduction with proper diet represents a loss of fat, with associated salts and fluids, but not a loss of muscle and gland tissue, since nitrogen equilibrium and a constant level of creatinine excretion are maintained.

The question naturally arises as to the modus operandi of the increased metabolism in obesity. Since the thyroid gland is known to be one chief regulator of the metabolic rate, it would seem logical to assume that it might play a part in this connection. Certain indirect evidence of increased thyroid activity has been adduced in addition to the simple fact of increased metabolism. Increased pulse rates and blood pressures in the higher ranges of total metabolism, frequent diminution of dextrose tolerance<sup>7</sup> and a general upward tendency of the basal metabolisms with increasing weight are all suggestive. That hyperthyroidism could

Cases Showing the Drop in Total Heat Production in the Resting State Which Follows Weight Reduction \*

Case	Sex	Age	Weight				Surface Area				Basal Metabolism				Total Heat Production			
			Pounds		Per Cent Above Normal		Square Meters		Per Cent Above Normal		Calories per Sq. Meter per Hour		Per Cent ± Normal		Calories per Hour		Per Cent Above Normal	
			First	Final	First	Final	First	Final	First	Final	First	Final	First	Final	First	Final	First	Final
M. S.	♀	37	228	159	73	20.0	2.06	1.77	27	9.0	33.65	33.5	- 8.0	- 8.0	69.3	59.4	+17	+ 0.6
M. P.	♀	47	189	143	73.1	8.4	1.61	1.61	17.5	4.5	31.21	27.0	-10.9	-23.0	56.49	43.58	+ 5	-19.0
M. W.	♀	38	239	179	64.8	23.0	2.10	1.86	20.7	6.8	36.27	32.65	+ 1.0	- 9.0	76.16	60.73	+22	- 4.0
H. R.	♀	43	288	197	86	27.0	2.29	1.95	66.0	11.0	39.54	36.2	+10.0	+ 0.2	90.54	70.6	+46	+13

\* Note the drop in total calories per hour (in M. S.) even when the basal rate remains constant.

duction, blood pressure and pulse pressure were taken for each group. The results are expressed in chart 3.

The average pulse was 65 in the first group and 85 in the second; percentage overweight 61 in the first and 73 in the second; basal metabolic rate -1 in the first and +6 in the second; resting total heat production +17 in the first and +33 in the second; blood pressure 137/89 in the first and 137/88 in the second; pulse pressure 49 in the first and 52 in the second. These figures show that tachycardia occurred in the more pronounced overweight group with an average increase of 7 per cent in the basal metabolism and of 16 per cent in the total heat production.

exist without an abnormally high basal metabolism might appear to be somewhat revolutionary according to current diagnostic concepts but in our opinion is not beyond the realm of possibility. Final statements cannot be made without further study of this question.

#### METABOLIC STIMULANTS

Since in obesity there is already an increased total metabolism, the giving of metabolic stimulants in the form either of thyroid preparations or of drugs such

6. Strang, J. M.; McCluggage, H. B., and Evans, F. A.: The Nitrogen Balance During Dietary Correction of Obesity, *Am. J. M. Sc.* 151: 336 (March) 1921.  
7. Unpublished data.

as dinitrophenol is entirely illogical. At this stage such stimulants are not well tolerated. It was the experience of one of us (J. J. S.) that thyroid extract caused toxic symptoms to become manifest very rapidly in a number of such cases, although the explanation at the time was not well understood. As pointed out by Evans and Strang,<sup>2</sup> many obese patients with high total heat production already manifest certain toxic symptoms characteristic of exophthalmic goiter. Additional stimulation would seem to be unwarranted and dangerous.

It is not our purpose to stress the inherent dangers in the administration of such a toxic substance as dinitrophenol. Reports of poisoning have already been noted in the literature.<sup>8</sup>

Is thyroid extract ever indicated in obesity? It has been our policy to administer it in certain cases with low basal metabolism without regard to the height of the total metabolism. It is a common experience to note with dietary restriction an early drop characteristic of the fasting state both in basal and in total metabolism. This takes place even before any significant amount of weight has been lost and is therefore not an expression of a diminished surface area. Somewhat arbitrarily, perhaps, we have administered thyroid extract when from clinical signs it was assumed that such a drop in metabolism had taken place. When possible, the dosage has been gaged by repeated basal determinations. In other cases the pulse rate and general symptomatology were our guide.

#### SUMMARY

A series of patients ranging from 1 to 135 per cent overweight has been studied as to surface area, basal metabolism, total heat production, pulse rate, blood pressure and pulse pressure. It has been shown that with an increasing percentage of overweight there is a progressive increase in the resting total metabolism and a slight tendency for an increase in the basal metabolism. A study of the pulse rate has shown that those cases presenting a resting rate over 80 were definitely more overweight than those presenting lower rates, and that the total metabolism was likewise correspondingly higher. There is a possible significance of this as relating to an increased thyroid activity. Consideration has been given to the indications for the use and non-use of metabolic stimulants.

#### CONCLUSIONS

1. The total metabolism in obesity increases directly with the excess of weight.
2. The basal metabolism in obesity is usually within normal limits but tends to be in the lower ranges of normal for the slightly obese and in the higher ranges for the excessively obese.
3. The increased metabolism favors rapid weight loss on dietary restriction.
4. The employment of metabolic stimulants while normal basal and high total metabolic rates prevail is illogical and contraindicated.
5. Thyroid preparations may be employed judiciously in later stages of treatment with submaintenance diets when it can be shown or assumed that the metabolic rates have been lowered.
6. In all metabolic studies the heat production per unit of body surface (the so-called basal metabolism)

and the total heat production of the organism under basal conditions should be sharply differentiated, since they represent two entirely different approaches to the problem of obesity.

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## INDUCED HYPERCALCEMIA

### ITS POSSIBLE THERAPEUTIC RELATION TO THROMBOCYTOPENIC PURPURA

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In 1932 we<sup>1</sup> reported a case of acute hypercalcemia caused by accidental overdosage with parathyroid extract. Search of the literature reveals no other such report in man. A white boy, aged 5 years, who was being treated for severe essential purpura haemorrhagica, had received hypodermically 5 cc. (100 units) of parathyroid extract daily for a period of five days. The earliest symptom of overdosage that he presented was vomiting. This gradually increased in severity. He became progressively listless until physical depression rendered him actually in a critical condition. He was apathetic and extremely lethargic. He had an irregular fever, which reached a high of 103 F. On the beginning of the sixth day the cause of his condition was recognized and the extract was stopped. During the period of treatment (five days), therefore, he had received in all 25 cc. (500 units). The blood serum calcium was determined to be 19.6 mg. per hundred cubic centimeters of blood. Within three days the serum calcium fell to 12.1 mg. and the patient appeared normal. Seven days after the parathyroid extract had been discontinued a roentgenographic study of the long bones was negative for absorptive or other changes. It was also noted, without any significance being attached to the observation, that during the course of the administration of the parathyroid extract the bleeding time had fallen to five minutes and ten seconds. At the time of admission a reading of the bleeding time had not been concluded after two hours' observation. Concomitantly it was likewise noted that all visible bleeding had stopped. However, since the patient had previously been treated without effect with several other measures, including transfusions and injections of antivenin, it was obvious that no therapeutic result could reasonably be ascribed to the acute hypercalcemia, even if it were theoretically tenable that such a spectacular result might be expected. The occurrence of a spontaneous remission was considered a not unlikely possibility. It may be stated, however, that follow-up studies to the present time have shown no recurrence of the purpura.

Recently another case of essential purpura haemorrhagica presented itself. Here too several forms of treatment were employed, again without result. It was recalled that the case previously reported had apparently been cured, if not because of parathyroid extract, at least after the administration of large doses. Parathyroid extract was again employed, with cure apparently again ensuing. The following case is presented not necessarily as an example of a new treatment for purpura haemorrhagica, although such a possibility sug-

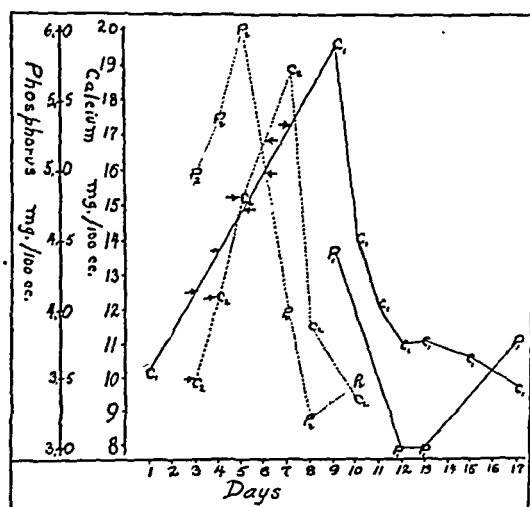
8. Tainter, M. L.; Cutting, W. C., and Stockton, A. B.: Use of Dinitrophenol in Nutritional Disorders, *Am. J. Pub. Health* 24:1045 (Oct.) 1934. Hoffman, A. M.; Butt, E. M., and Hickey, N. G.: Neutropenia Following Amidopyrine: Preliminary Report, *J. A. M. A.* 102:1213 (April 14) 1934. Bohn, S. S.: Agranulocytic Angina Following Ingestion of Dinitrophenol, *ibid.* 103:249 (July 28) 1934. Silver, Solomon: A New Danger in Dinitrophenol Therapy, *ibid.* 103:1058 (Oct. 6) 1934.

From Pediatric Service No. 1, Mount Sinai Hospital.  
1. Lowenberg, Harry, and Ginsburg, T. M.: Acute Hypercalcemia, *J. A. M. A.* 99:1166 (Oct. 1) 1932.

gests itself, but rather in an attempt to help establish, with the previously reported case, the symptomatology of acute hypercalcemia or, better perhaps, of acute parathyroid poisoning in man:

M. L., a white boy, aged 7 years, was being treated for essential thrombocytopenic purpura. A little over a month after treatment had been instituted, particularly with moccasin snake venom as described by Peck and Rosenthal,<sup>2</sup> the patient's condition was somewhat worse than on admission. Each injection of venom was followed by extensive ecchymosis at the point of injection, and neither bleeding time nor platelet count was favorably influenced by the remedy. All other therapy, which also had been pursued without benefit, was stopped and treatment was begun, arbitrarily, with daily subcutaneous injections of 3 cc. (60 units) of parathyroid extract. Calcium gluconate, 10 cc., was given intramuscularly at the same time. This was administered to prevent depletion of the calcium content of the bones as the result of the maintenance of the artificially high blood calcium level.

Preceding the use of parathyroid extract and the calcium gluconate, for the purpose of control, the blood serum calcium



Changes in the serum calcium and phosphorus determinations in two cases.  $C_1$  indicates calcium found in case 1;  $C_2$ , in case 2;  $P_1$ , phosphorus in case 1;  $P_2$ , in case 2. The arrows indicate administration of parathyroid extract.

was determined to be 9.7 mg. per hundred cubic centimeters of blood. Serum phosphorus was 5. The following day after treatment was begun, serum calcium was 12.3 and phosphorus 5.4 mg. per hundred cubic centimeters. Nausea and vomiting developed. These, as in the first case, are apparently the earliest symptoms of the toxic manifestations of the drug. During the evening of the second day the child complained of severe pain in the lower part of the abdomen, and some tenderness was noted just above the symphysis pubis. There was, however, no rigidity. An enema returned free from blood. The stools previously had contained blood. Pain disappeared the following morning. Apathy and lethargy developed, the patient answering questions only in monosyllables and with reluctance. He was a bright, intelligent boy and previous to the appearance of the lethargic symptoms when asked the nature of his ailment would reply smilingly that he had "thrombocytopenic purpura." All his movements became slow and were made apparently with great effort. Vomiting became progressively worse and soon was persistent. On the third day of treatment with parathyroid extract, serum calcium was 15.2 mg. and serum phosphorus 6.1 mg. per hundred cubic centimeters. On the fourth day treatment with parathyroid extract was discontinued and on the fifth day serum calcium was 18.8 and phosphorus 4 mg. per hundred cubic centimeters. On the sixth day they were 11.4 mg. and 3.2 mg. respectively. On the eighth day calcium was 9.4 mg. and phosphorus 3.4 mg. per hundred cubic centimeters. At no time was there any

notable temperature elevation, although the pulse rate was markedly elevated at the height of the hypercalcemia. X-ray studies of the long bones were not made in this case.

As in the first case, there was a spectacular clinical improvement as indicated by the tourniquet test and the absence of new lesions over the surface of the body. Previous to the use of parathyroid extract some of these lesions were so large and intense as to appear as actual hemorrhages under the skin, such as would result from a heavy blow. Hematologically, soon after the beginning of parathyroid treatment the patient also showed definite objective improvement. The patient was discharged from the hospital in excellent condition, July 28, 1935. He was readmitted September 3 for a check up. Clinically he was cured, his body being free from visible lesions. His mouth and gums were normal, whereas previously large hemorrhagic extravasations had appeared in these parts as well as under the mucous membrane of the hard and soft palate and the cheeks. Hemoglobin was 90 per cent (Sahli), red blood cells 4,640,000, white blood cells 9,250, polymorphonuclears 68 per cent, large monocytes 28 per cent, transitionals 1 per cent, eosinophils 3 per cent. Coagulation time and bleeding time (both venous blood) were respectively six minutes and three minutes, platelet count 210,000, blood serum calcium and phosphorus respectively 10.6 mg. and 5.3 mg. per hundred cubic centimeters. Clot retraction was complete in one and a half hours. The tourniquet test, which had been always promptly positive within a half minute or so, was negative after three minutes.

He was readmitted, September 30, for a check up and for the extraction of diseased teeth, and blood studies showed no abnormalities. The platelet count was 290,000, bleeding time three minutes, clotting time five and one-half minutes; clot retraction was complete in four hours. The tourniquet test was again negative. Two teeth were extracted with no more than the ordinary amount of bleeding.

The changes in the serum calcium and phosphorus determinations are given in the accompanying chart. The general parallelism between the calcium and the phosphorus curves in both cases is striking. The levels of both calcium and phosphorus rise with the administration of parathyroid extract and fall promptly when the latter is withdrawn. Striking also, and worthy of emphasis, is the sharp fall in the calcium level after the parathyroid extract was stopped.

As stated in the case previously reported, on admission the bleeding time determination was not concluded after two hours of observation, but on the second day of parathyroid treatment the bleeding time fell to five minutes and ten seconds. The platelet count varied between 30,000 and 50,000, but with the administration of parathyroid extract the count steadily rose until at the conclusion of treatment it was 90,000 and three days later 110,000.

In this case the manifestations were somewhat different. On admission the bleeding time was three minutes, but there was no clot retraction. Three days later the bleeding time was six minutes, the next day forty minutes, subsequently one-half hour, and two days before parathyroid extract was begun the bleeding time determination was not concluded after two hours and there was no clot retraction. The prothrombin time soon after admission was ten minutes. After parathyroid treatment was concluded the bleeding time was fifteen minutes and a few days later four and one-quarter minutes, with complete retraction of the clot in twenty-four hours. Subsequently frequent determinations of the bleeding time revealed it to be normal. On admission the platelet count was 70,000, four days later 100,000, the next day 40,000, and then it varied between 30,000 and 60,000 for a little over a month, throughout the entire time that moccasin snake venom was being used. Thirteen days after parathyroid extract was stopped, the platelet count was 185,000.

2. Peck, S. M., and Rosenthal, Nathan: Effect of Moccasin Snake Venom (*Ancistrodon piscivorus*) in Hemorrhagic Conditions, *J. A. M. A.* 104: 1066 (March 30) 1935.

Two cases obviously are not sufficient to establish any form of treatment, especially when neither case is well controlled. The striking results, however, are very suggestive, and it would seem that the treatment of thrombocytopenic purpura by the induction of artificial hypercalcemia by the use of large doses of parathyroid extract is at least worthy of trial. As compared with other forms of treatment, one would seem to have nothing to lose. On the assumption that the apparent cures were obtained as the result of the treatment administered, no explanation is apparent to account for the results.

#### SUMMARY AND CONCLUSIONS

1. A second case of acute hypercalcemia produced by intentional overdosage with parathyroid extract occurred in a boy with thrombocytopenic purpura.

2. Toxic symptoms occurring in man are similar to those reported by many workers as occurring in animals with experimental hypercalcemia.

3. The earliest symptom is vomiting. This is shortly followed by weakness, apathy and lethargy.

4. Both patients, once hypercalcemia was established, presented definite objective changes in the blood (bleeding time, clotting time, clot retraction, platelet count) as well as clinical cure.

5. A cause and effect relationship between the hypercalcemia and the apparent cures is suggested, although there appear to be no sound theoretical grounds for such a conclusion.

6. Calcium gluconate was used to protect the bones from the withdrawal of calcium from them into the blood.

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### COUNTY-WIDE USE OF IMMUNE GLOBULIN IN THE MODIFICATION AND PREVENTION OF MEASLES

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The rich field of epidemiologic research in private and particularly rural practice has been pointed out by Milton J. Rosenau and others as a source of medical information hitherto undeveloped. The reasons for this are chiefly administrative. Individual series of any one practitioner are too small to be significant. The collecting and confirming of data from any group of physicians is time consuming and the establishing of a uniform system that is essential to comparable facts and figures is difficult in so individualistic a profession.

In the face of a predicted epidemic of measles of unusual proportion, the Hillsdale County Medical Society met the problem in a manner so effective and so fraught with possibilities for future epidemiologic research that the record of its procedures, as well as the record of its conclusions, seems worthy of publication.

For a long time, prevention and modification of measles in persons who have been exposed has been practiced by various seral methods with varying degrees of success.<sup>1</sup> It is beyond doubt a good pediatric and preventive procedure to attempt to modify or prevent measles in an exposed infant or child. The only question is through what medium shall the immune antibody be given?

Health departments have for years been advising administration of whole blood.<sup>2</sup> Such programs used by the medical profession at large have proved a failure. The chief reason apparently is that withdrawal of 20 cc. of blood looks like a major operation to most people. The injection of 20 cc. is "cruel." Many of the medical profession itself share this point of view. Further, the antibody is most indefinite and therefore "controlled modification" is difficult. The public is "serum conscious" and has not been generally educated to take or give whole blood.

Immune serum or convalescent serum has proved excellent but is expensive and in some areas difficult to procure in sufficient quantity for wholesale procedures. In a rural area the importance of conducting a "wholesale" procedure with as few as possible limiting and qualifying factors cannot be overemphasized.

Immune globulin<sup>3</sup> is only another of the vehicles to carry the immune substance or antibody. It has the advantage of being a waste product, and from 3 to 5 cc. of the extract, used by us, seems to be the equivalent of 10 cc. of immune serum or 20 cc. of adult blood.

The use of immune globulin in modification and prevention of measles is of recent origin.<sup>4</sup> Dr. Charles McKhann has used it effectively in the Children's Hospital in Boston. In 1,258 cases in which various preparations of immune globulin were administered, 95 per cent showed a prevention or modification of the disease and 5 per cent failure.<sup>5</sup> Through the kindness of Dr. McKhann, associate professor of pediatrics at Harvard Medical School, and Dr. Robinson, director of Public Health Laboratories of Massachusetts, we have received lots for both intramuscular and oral administration for use in private practice in the country.

It has long been observed that the results obtained by individuals and institutions could not be duplicated in private practice. A careful study of home and hospital cases of measles made by Karelitz and Schick<sup>6</sup> corroborates and explains this observation.

The Hillsdale County Medical Society took action early in the year endorsing a program of "measles prevention and modification" in the county to determine the value of such a program and the practical value of immune globulin in private practice. No age limitation was put on the program because it was felt that the criticism provoked would not justify the procedure. This decision by the medical society eliminated the possibility of running controls; i. e., one child protected and one not in an exposed family. In such a disease as measles this is of the least possible significance, as the percentage of disease developed in a susceptible population is over 90 per cent to intimate contact.<sup>6</sup>

The immune globulin was distributed, free of charge, to the physicians. In return the physicians kept a careful record of the cases and turned them in to the secretary of the county medical society for analysis and conclusions. From 3 to 5 cc. of immune globulin was given intramuscularly or 12 cc. orally, when possible between the fourth and ninth day after exposure. Most

1. Barrett, C. D.: The Prevention and Modification of Measles, *Pub. Health Nursing* 24: 192 (April) 1932.

2. Council on Pharmacy and Chemistry: Immune Globulin (Human): Placimmin-Squibb, and Immune Globulin (Human)-Lederle, *J. A. M. A.* 105: 510 (Aug. 17) 1935. Immune Globulin (Human) and Measles, editorial, *ibid.* 105: 514 (Aug. 17) 1935.

3. McKhann, C. F.; Green, Arda, A., and Coady, Harriet: Factors Influencing the Effectiveness of Placental Extract in the Prevention and Modification of Measles, *J. Pediat.* 6: 603 (May) 1935.

4. McKhann, C. F., and Coady, Harriet: Immunity in Infants to Infectious Diseases: Placental Antibodies, *South. M. J.* 27: 20-24 (Jan.) 1934.

5. Karelitz, Samuel, and Schick, Béla: Epidemiologic Factors in Measles Prophylaxis, *J. A. M. A.* 104: 991 (March 23) 1935.

6. Gallagher, J. R.: Use of Convalescent Measles Serum to Control Measles in a Preparatory School, *Am. J. Pub. Health* 25: 595 (May) 1935. Routine Measures for the Prophylaxis of Communicable Diseases, Report of Special Committee on Prophylactic Procedures Against Communicable Diseases, *J. Pediat.* 6: 586 (April) 1935.



of the cases reported were discussed with the secretary in respect to time of administration and probable exposures, and some of the cases were seen personally by him in consultation.

The program was preceded by newspaper publicity, talks and lectures to parent-teacher associations and to children concerning measles, its importance, its danger and the fact that now the family doctor had a "serum" that he could use which might prevent the disease temporarily or modify the disease and so prevent it for life.

The medical profession in this county was very conservative and critical of results. Because we could not get the immune globulin from the Massachusetts State Biological Laboratories we used, early in December, a commercial preparation of immune globulin. The local reactions were severe and results were only about 50 per cent successful. The criticism was so immediate that the whole matter was dropped until the arrival of McKhann's immune globulin.

The observations of the physicians of this county indicate that, in the 1934-1935 epidemic, most of the cases of measles were of an unusually severe nature, all symptoms being present, so that the effect of the treated cases stood out in bold contrast to those not receiving treatment.

In a rural practice it proved impossible to keep an accurate temperature chart over the period of modification. Frequent calls on all patients immunized were not possible and not necessary according to the physicians, as the results were so clear cut.

No cases were considered as "modified" in which any doubt existed in the mind of the doctor as to the results. It should be noted that one of the most acid tests to which any investigation can be subjected is its use by an unselected critical group of physicians.

Not in every case was modification the objective; occasionally complete prevention was the goal. We therefore considered modification and no measles as success. Only cases of definite exposure and definite

cation could not be expected. Three of these patients were older, aged 30, 16 and 11 years, and should have received a larger dosage of immune globulin to obtain a definite modification. In none of the four cases were both the correct time of administration and the correct amount of immune globulin used. If these four cases were then thrown out of the calculation, 100 per cent success could be reported in the remaining seventy-three cases.

TABLE 3—Results by Day of Administration of Immune Globulin

Day	No Effect	Modification	No Measles
Third	0	0	2
Fourth	0	2	6
Fifth	1	21	8
Sixth	0	7	7
Seventh	0	7	4
Eighth	1	4	4
Ninth or over	2	0	0
Totals	4	41	31

TABLE 4—Results of All Oral Cases

	Cases	Percentage
No effect	3	19
Modification	12	75
No measles	1	6

As modification is the object in 90 per cent of the cases, it is interesting to determine the reason for thirty-one cases in which measles did not develop. Seven of these patients were intentionally prevented from having measles by early administration of immune globulin. Allowing 10 per cent of the susceptible cases intimately exposed the privilege of not contracting the disease anyway,<sup>6</sup> we have 10 per cent of fifty-seven persons, or, roughly, six more, making a total of thirteen persons of the thirty-one who would naturally have "no measles." The remaining eighteen we feel can be accounted for partly by a "factor of exposure" hitherto not recognized (table 2). The experience of individual doctors led us early in the year to an assumption that casual exposures needed less serum administered at a later date than did intimate exposures in order to obtain modification.

The work of Karelitz and Schick published in May is in accord with our observations and substantiated our assumption. In 60 per cent of the casual exposures no measles developed while in only 10 per cent (corrected for early administration and infectious rate as previously described) of intimate exposures no measles developed. The 60 per cent of no measles in the casual group might be due to the naturally low infectious rate in casual exposures. It was the definite impression of the physicians, however, that the reduction of dosage and the delaying of administration produced more modification in the casual exposures. Our small group of figures do not substantiate this impression.

Table 3 shows definitely that the most important factor in this series is still the time of administration—the third and fourth days giving probable prevention, the fifth to the eighth day giving modification and the ninth day or later giving failure for clear-cut results.

#### GROUP II

Those receiving oral administration, 12 cc. of immune globulin in three 4 cc. doses in ice water before breakfast, numbered sixteen cases in all.

TABLE 1—Results of All Intramuscular Cases

	Cases	Percentage
No effect	4	6
Modification	42	55
No measles	31	40

TABLE 2—Analysis of Casual and Intimate Exposures

	Casual Cases	Intimate Cases
No effect	2	2
Modification	6	36
No measles	12	19
Totals	20	57

history of susceptibility were included in the group in which measles did not develop. No patients under 6 months of age are included in the series.

We have divided our data into two groups.

#### GROUP I

Those receiving the usual intramuscular administration of the serum (seventy-seven cases in all) show 95 per cent success to 5 per cent failure.

It should be noted that, of the four cases of failure, in three cases immune globulin was given so late—the ninth day after exposure or later—that clear-cut modifi-

It should be noted that the one case of "no measles" in the series could be due, first, to early adequate dosage given on the third day with the purpose of prevention; secondly, to chance on the infectious rate. This was one of three casual exposures, the other two casual exposures in which immune globulin was given at a much later date after exposure obtaining modification.

Of the three patients in whom treatment failed, two were given immune globulin on the ninth day or after. Only once when both dosage and time of administration were correctly given was frank failure observed.

The results arrange themselves very much the same in tables 5 and 6 as in tables 2 and 3 of the previous group.

After intramuscular administration, slight local reaction occurred in thirty-two, or, roughly, one third of the cases. Slight febrile reaction was observed in less than one sixth of the cases. These reactions occurred in from twelve to twenty-four hours and did not last. No severe or general reaction was reported.

The significance of death rates in so small a population is not marked, but it is interesting that in 1930 in Hillsdale County six deaths from measles were recorded with only half as many cases. To date, no deaths have been reported with the largest number of cases the county has ever seen. The significance of this observation is minimized by a fall in the case fatality rate for the whole state from 0.43 in 1932 to 0.23 in the first ten months of 1935.

#### CONCLUSIONS

Although our series is not large enough to bring definite statistical proof, it seems sufficient to draw certain conclusions:

1. Immune globulin is apparently an effective and practical agent in modification and prevention of measles in the private practice of medicine.

TABLE 5—Analysis of Casual and Intimate Exposures

	Casual Cases	Intimate Cases
No effect	0	3
Modification	2	10
No measles	1	0
Totals	3	13

TABLE 6—Results by Day of Administration of Immune Globulin

Day	No Effect	Modification	No Measles
Third	0	0	1
Fourth	0	2	0
Fifth	0	2	0
Sixth	1	2	0
Seventh	0	3	0
Eighth	0	1	0
Ninth or over	2	2	0
Totals	3	12	1

2. The three chief variables are: amount of exposure, amount of immune globulin, and the time of administration. The last remains the most important single factor, but with intimate exposure in homes, an increased dosage or an earlier dosage is necessary to produce modification. In casual exposure it is wise to prolong the time before administration or lessen the amount of immune globulin to produce modification.

3. A fourth factor may be considered as age. Older patients need more immune globulin and earlier administration to produce the same results.

4. Reactions from intramuscular administration were negligible.

5. Administration by mouth deserves further trial, our few cases giving a percentage of success only slightly lower than intramuscular administration.

6. Epidemiologic research of statistical significance can be carried out by a county medical society through the cooperation of the individual members in a uniform method of procedure and careful recording of separate observations.

7. A county-wide program of measles prevention can be carried on in a manner satisfactory to the best interest of both the medical profession and the community.

8. The death rate from measles in Hillsdale County seems to have been lowered during the period of this county-wide project.

### THE VALUE OF THE PROGNOSTIC VENOM REACTION IN THROMBOCYTOPENIC PURPURA

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This paper is a report on the value of moccasin snake venom in cases of essential thrombocytopenic purpura haemorrhagica. The present study is based on observations made on fifty patients, fourteen males and thirty-six females. It may be discussed from the following points: first, the importance of a skin reaction to an intradermal injection of moccasin snake venom as a prognostic measure in the clinical course of this disease; second, the therapeutic efficacy of the venom given subcutaneously, and, third, the use of the skin reaction as a guide for splenectomy.

All the cases studied were typical; some have been followed for as long as five years. They exhibited hemorrhagic tendencies such as purpura, ecchymoses, and bleeding from the mucous membranes. The blood picture showed the characteristic diminution of blood platelets. This was associated with a prolonged bleeding time, a positive reaction to the capillary resistance test, a positive flicker or pinch test, and an absence of clot retraction. In forty-four cases no definite etiologic factor could be determined; these may be regarded as of the idiopathic type. In six instances the ingestion of drugs seemed to be directly responsible. Other types of secondary or symptomatic thrombocytopenic purpura associated with leukemia, subacute bacterial endocarditis, nephritis, malignancy and other conditions will not be discussed.

#### THE PROGNOSTIC VENOM REACTION

The intradermal skin test known as the prognostic venom reaction consists of the injection intradermally of 0.1 cc. of 1:3,000 standardized moccasin venom, with a control of 0.1 cc. of physiologic solution of sodium chloride. The test is read in one hour. A positive reaction is manifested by capillary rupture with diffusion of blood into the tissues (figs. 1 and 2). The absence of capillary rupture constitutes a negative reaction. Diffusion of blood at the site of injection after



twelve hours is regarded as a delayed positive reaction. A positive reaction indicates the presence of a purpuric state and a close association with a thrombocytopenia. Clinical improvement is shown by a change from a positive to a negative reaction.

The immediate venom reaction was positive in all cases. The succeeding reactions varied; some patients improved clinically and developed a negative reaction with a gradual return to a normal hematologic status. Others exhibited no improvement either clinically or hematologically and maintained a positive reaction. There were all degrees of variation between these extremes. The following classification is based on our experience with the venom reaction in cases of thrombocytopenic purpura, observed at the Mount Sinai Hospital.

1. Acute cases with recovery (eight cases).
2. Acute cases with fatal termination (two cases).
3. Chronic cases with symptomatic improvement during venom therapy<sup>1</sup> (seventeen cases).
4. Chronic cases without symptomatic improvement during venom therapy (four cases).
5. Recurrent cases (two cases).

TABLE 1.—*Acute Purpura Haemorrhagica with Recovery*

Case	Sex	Age	Date	Venom Reaction	Venom Therapy	Course
1. E. K.	♀	3 yrs.	7/31/35 8/2/35	Positive Negative	None	Recovered spontaneously both symptomatically and hematologically
2. P. P.	♀	20 mos.	7/2/35 7/6/35 7/11/35	Markedly positive Less positive Negative	None	Recovered spontaneously
3. H. K.	♂	13 yrs.	3/20/35 3/22/35 3/24/35 4/16/35	Markedly positive Less positive Slightly positive Negative	Six injections; 1 cc. of 1:3,000 venom twice a week for 2 weeks	Recovered
4. M. M.	♂	40 yrs.	11/26/33 12/12/33	Positive Negative	Venom for 2 months as a precautionary measure	Recovered
5. J. S.	♀	25 yrs.	11/22/33 2/14/34	Markedly positive Negative	Eight injections; 1 cc. 1:3,000 twice a week for 4 weeks	Recovered
6. J. L.	♂	23 yrs.	7/1/35 7/20/35	Positive Negative	None	Recovered
7. R. F.	♂	2 yrs.	12/19/32 4/10/33	Positive Negative	1 cc. 1:3,000 twice weekly for 8 weeks	Recovered
8. A. P.	♂	7 yrs.	10/30/35 11/3/35 11/6/35	Positive Slightly positive Negative	0.5 cc. of 1:3,000 once weekly for 3 weeks	Recovered

#### 6. Chronic cases with splenectomy:

- (a) Responding to both venom therapy and splenectomy (three cases).
- (b) Not responding to venom therapy but responding to splenectomy (three cases).
- (c) Responding neither to venom therapy nor to splenectomy (five cases).

#### CLINICAL AND LABORATORY OBSERVATIONS

1. *Acute Purpura with Recovery* (table 1).—Eight patients, five males and three females, with ages varying from 20 months to 40 years, were under observation. The initial prognostic venom reaction observed during the active stage of the disease was strongly positive. The course of the disease varied from a few days to four months. The venom reaction gradually became less positive. The negative reaction usually occurred before the clinical signs had entirely disappeared and before the hematologic criteria had returned to normal. All the patients recovered both clinically and hematologically, showing the prognostic

value of repeated intradermal venom reactions in this type of case. The following cases are cited as typical examples:

CASE 8 (table 1).—A. P., a white boy, aged 7 years, was seen Oct. 30, 1935, when the child's mother had noticed the sudden development of diffuse ecchymoses on his body and also had found blood on his pillow. The past history was negative except that one year previously some purpuric spots had developed on the oral mucous membrane and on the chest during a mild attack of influenza. The family history was negative. The patient was normally developed and well nourished. There were ecchymoses over the shoulders and lower extremities, and a few purpuric spots on the lips and on the markedly congested gums.

Laboratory examination, October 30, revealed: hemoglobin 94 per cent; red blood cells 5,050,000; white blood cells 7,800; platelets 3,000; differential count: neutrophils (nonsegmented) 12 per cent; neutrophils (segmented) 32 per cent; eosinophils 3 per cent; lymphocytes 47 per cent; plasma cells 2 per cent; monocytes 4 per cent. Coagulation time was five minutes and bleeding time seventeen minutes; the tourniquet test and pinch test were positive; clot retraction was poor in twenty-four hours, and there was a positive reaction to the intradermal venom test.

The patient received three venom injections of 0.5 cc. each at weekly intervals. The ecchymoses began to disappear after the second venom injection, with a gradual change from a positive to a negative venom test. Clinical and hematologic recovery followed rapidly. The improvement was spontaneous. Laboratory examination, November 20, revealed: hemoglobin 82 per cent; red blood cells 4,560,000; white blood cells 8,600; platelets 140,000; differential count: neutrophils (nonsegmented) 5 per cent; neutrophils (segmented) 49 per cent; eosinophils 7 per cent; lymphocytes 31 per cent; monocytes 8 per cent. Coagulation time was five minutes, bleeding time two minutes, and the prognostic venom reaction negative.

CASE 2 (table 1).—P. P., a white girl, aged 20 months, was sent to the Mount Sinai Hospital in the latter part of June 1935 because of the development of diffuse ecchymoses and purpura. The family history was negative, likewise the past history, with the exception that three weeks before admission the child bled profusely from a pinprick. On physical examination there were many ecchymotic areas and purpuric spots over her face, body and extremities, and blood was observed on the edge of both nares. The liver was 2 cm. below the right costal margin; the spleen was just palpable; other physical appearances were normal.

Laboratory examinations, June 30, revealed: hemoglobin 60 per cent; red blood cells 3,300,000; white blood cells 14,000; platelets 30,000; differential count: neutrophils (nonsegmented) 8 per cent; neutrophils (segmented) 30 per cent; lymphocytes 50 per cent; monocytes 12 per cent; bleeding time twenty-three

1. The venom was given therapeutically in doses of 1 cc. of the 1:3,000 dilution, usually twice a week. A complete description of the technic and method of administration has been given in previous publications (Peck and Rosenthal). The venom, as supplied by the Lederle Laboratories, can be used for testing as well as for treatment.

minutes; coagulation time five minutes; tourniquet test positive; no clot retraction; pinch test positive; prognostic venom reaction strongly positive. The Wassermann reaction was negative and stools were positive for guaiac.

Clinical Course: Bleeding from the nose was readily controlled and the child improved rapidly without treatment. The first intradermal venom reaction, July 2, was markedly positive. The second reaction four days later was decidedly less positive; a favorable prognosis was made on the basis of this test. A third venom reaction, July 11, was negative. Two weeks later the purpuric and ecchymotic lesions had faded, the tourniquet test became negative, the bleeding time had decreased to six

that hemorrhagic bullae developed at the site of injection. Both patients died of anemia in spite of many transfusions. In one case there was a superimposed pneumonia.

3. *Chronic Purpura Haemorrhagica with Symptomatic Improvement During Venom Therapy* (table 2).—Seventeen patients, fourteen females and three males, were under observation. The ages varied from 4 to 70 years. The chief complaints in the majority of these individuals were epistaxes, metromenorrhagia,

TABLE 2.—*Chronic Purpura Haemorrhagica with Symptomatic Improvement*

Case	Sex	Age	Date	Venom Reaction	Venom Therapy	Course
1. C. B.	♀	31 yrs.	7/19/35 8/ 2/35 8/16/35 9/ 6/35 9/13/35 10/ 6/35	Markedly positive Less positive Positive Positive Negative (delayed positive) Negative	4 months	This dosage maintains patient symptom free; no hematologic improvement
2. F. O.	♀	24 yrs.	6/24/35 9/ 5/35 10/16/35 10/18/35	Positive Negative Delayed positive Negative	3 months	Improved symptomatically but not hematologically
3. A. F.	♀	.....	8/ 2/35 9/ 2/35	Negative Negative	6 months	Improved symptomatically but not hematologically
4. K. F.	♀	52 yrs.	2/18/35 3/29/35 10/20/35	Positive Negative Positive	7 months	Improved symptomatically but not hematologically
5. P. W.	♀	42 yrs.	7/31/35 8/ 4/35	Negative Negative	6 months	Maintains symptomatic improvement on venom; no hematologic response
6. I. Y.	♀	70 yrs.	10/16/31 10/ 5/32 7/31/35 10/20/35	Positive Positive Negative Positive	4 years	Maintains symptomatic improvement on venom; no hematologic response
7. D. D.	♂	52 yrs.	10/12/34 8/21/35 10/20/35	Positive Negative Negative	1 year	Maintains symptomatic improvement on venom; no hematologic response
8. L. T.	♀	45 yrs.	5/ 5/35 6/ 3/35 10/ 8/35	Positive Positive Negative	5 months	Maintains symptomatic improvement on venom; no change hematologically
9. I. E.	♀	46 yrs.	2/23/35 2/27/35 7/29/35 10/18/35	Markedly positive Positive Negative Negative	10 months	Symptomatic improvement maintained by venom; no change hematologically
10. H. P.	♀	42 yrs.	8/19/35 10/11/35	Delayed positive Delayed positive	5 months	Symptomatic improvement; no change hematologically
11. I. Q.	♂	4 yrs.	5/21/35 7/12/35 10/20/35	Positive Positive Slightly positive	5 months	Symptomatic improvement but no hematologic change
12. E. S.	♀	12 yrs.	9/23/35 9/30/35 10/ 4/35	Positive Positive Less positive	3 months	Symptomatic improvement but no hematologic change
13. M. M.	♀	8 yrs.	2/ 4/35 6/ 4/35 9/ 4/35	Positive Positive Slightly positive	9 months	Symptomatically improved but not hematologically
14. B. B.	♀	26 yrs.	10/24/34 4/ 5/35 6/20/35 10/25/35	Positive Negative Positive Delayed positive	1 year	Symptomatic improvement maintained by venom; no hematologic change
15. Y. K.	♀	35 yrs.	5/ 2/29 5/ 1/31 10/ 2/31 8/ 4/34 3/ 5/35 10/20/35	Positive Positive Delayed positive Delayed positive Delayed positive Delayed positive	4 years	Symptomatic improvement maintained by venom; no change hematologically
16. D. S.	♂	54 yrs.	8/12/35 8/18/35 10/15/35	Markedly positive Less positive Delayed positive	2 months	Some symptomatic improvement
17. F. M.	♀	25 yrs.	10/ 9/35 10/16/35 10/22/35 10/31/35	Positive Delayed positive Delayed positive Delayed positive	2 months	Some improvement

minutes, and the platelets had risen to 150,000. The patient was observed for four months, during which period no further symptoms developed. Thus the trend of the venom reactions indicated a favorable outcome.

2. *Acute Purpura Haemorrhagica with Fatal Termination.*—This group included two patients, one male and one female, 15 years and 34 years of age. Both patients had severe purpuric manifestations as well as gross hemorrhage from all mucous membranes, including mouth, throat, intestine, kidneys and bronchi. The prognostic venom reactions were so strongly positive

bleeding gums, occasionally bloody stools and urine, ecchymoses and, rarely, cerebral hemorrhage. These chronic cases repeatedly exhibited the characteristic positive venom reaction. Venom therapy was then instituted. This was followed by symptomatic improvement in every instance. The reaction to the intradermal venom test became negative with the symptomatic improvement. Typical examples of this series follow:

CASE 1 (table 2).—C. B., a white woman, aged 31, admitted to the gynecologic clinic at the Mount Sinai Hospital in January 1934, complained of prolonged menstrual bleeding occur-

ring six weeks after delivery. She was seen again, February 10, with the same complaint. Gynecologic examination was negative.

In July 1935 the patient developed a large spleen, two finger-breadths below the costal margin, anemia and purpura. She was referred to the hematologic clinic and the following blood

Clinical Course: Venom therapy was begun August 2. The patient continued to have ecchymoses and purpuric spots from the injections until about the middle of September; after that she began to feel better. Her menses were reduced in amount and duration. Only an occasional nosebleed occurred. The black and blue spots decreased markedly in number and fre-

TABLE 3.—*Chronic Purpura Haemorrhagica Without Symptomatic Improvement*

Case	Sex	Age	Date	Venom Reaction	Venom Therapy	Course
1. I. P.	♀	48 yrs	3/27/34 5/ 2/34	Markedly positive Markedly positive	3 months	No improvement; splenectomy suggested
2. M. C.	♂	3 yrs.	6/16/34 9/14/34	Markedly positive Markedly positive	4 months	No improvement; splenectomy suggested
3. S. C.	♀	37 yrs	3/ 2/35 10/20/35	Positive Delayed positive	16 months	No improvement; splenectomy suggested
4. A. D.	♀	20 yrs.	5/31/35 9/ 2/35	Positive Positive	6 months	No improvement; splenectomy suggested

TABLE 4.—*Chronic Purpura Haemorrhagica (Splenectomies and Splenic Artery Ligations)*

Case	Sex	Age	Date	Prognostic Venom Reaction	Venom Therapy	Course
(a) Responding to Both Venom and Splenectomy						
1. T. G.	♀	45 yrs.	10/ 5/34 12/ 5/34 12/ 7/34 12/10/34 4/ 5/35 8/ 4/35	Positive Delayed positive (Splenectomy) Negative Negative Negative	Improvement symptomatically for 14 months with venom	Clinical recovery since splenectomy
2. E. L.	♀	21 yrs.	3/ 1/33 3/ 4/33 8/ 8/33	Delayed positive (Splenectomy) Negative	Symptomatic improvement with venom 3 months before splenectomy	Clinical recovery since splenectomy
3. B. W.	♀	12 yrs.	9/12/35 9/17/35 10/22/35 12/ 2/35 12/23/35 12/24/35 12/24/35 12/26/35 12/28/35	Positive Positive Negative Positive Positive (Splenectomy) Negative 3 hours after operation Negative Negative	One month    ...  ...	Improved symptomatically   Recurrence of symptoms after discontinuing venom  Clinical recovery
(b) Responding to Splenectomy But Refractory to Venom						
4. A. R.	♀	56 yrs.	5/16/35 5/20/35 5/21/35 5/23/35 5/24/35 5/25/35 5/28/35 9/13/35 10/12/35	Markedly positive Markedly positive Markedly positive Markedly positive (Splenectomy) Slightly positive Negative Negative Negative	Three injections of venom; severe reactions	Symptomatic and hematologic improvement since splenectomy
5. A. S.	♂	17 yrs	12/ 1/32 12/ 6/32 12/17/32 12/23/32	Markedly positive Markedly positive (Splenectomy) Slightly positive	Four injections of venom; severe reactions	Clinical recovery since splenectomy
6. B. G.	♀	29 yrs.	5/17/34 5/18/34 5/19/34 6/ 8/34	Positive Positive (Splenectomy) Delayed positive	Refractory to 3 months of venom therapy	Clinical improvement since splenectomy
(c) Responding Neither to Splenectomy Nor to Venom						
7. J. M.	♀	4½ yrs.	7/21/33 7/26/33 2/20/35	Positive (Splenectomy) Slightly positive	Refractory to 4 months of venom therapy	Little improvement since splenectomy
8. R. LaC.	♀	35 yrs.	3/14/34 2/18/35 3/29/35	Positive Positive Positive	Refractory to 18 months of venom therapy	Little improvement since splenectomy
9. A. B.	♂	43 yrs.	7/24/34 7/25/34 7/30/34	Positive (Splenectomy) Positive	Four injections of venom; severe reactions	Death
10. M. P.	♀	29 yrs.	1/13/33 1/25/33  2/ 5/33 8/12/34 11/11/34	Positive Ligation of splenic artery Splenectomy Positive	No improvement with venom or splenectomy	Death
11. F. D.	♀	21 yrs.	4/10/33 4/24/33 8/18/33	Positive Ligation of splenic artery Positive	Refractory to 6 months of venom therapy	Death

picture was found: hemoglobin 75 per cent; red blood cells 5,500,000; white blood cells 9,200; platelets 25,000; bleeding time ten minutes; coagulation time eight minutes, and delayed clot retraction. The venom reaction was positive and was repeatedly so August 2 and 16 and September 6. It became a delayed positive reaction September 13 and was negative October 6 and 18.

quency. A clinical response to the venom therapy occurred, evidenced by the reversal of the prognostic venom reaction, even though the blood picture did not improve.

CASE 2 (table 2).—F. O., a white woman, aged 24, appeared at the hematologic clinic June 24, 1935, with a history of black and blue spots occurring after the slightest injury. Her menses were prolonged and profuse.

Laboratory examination, June 24, revealed: hemoglobin 75 per cent; red blood cells 4,000,000; white blood cells 6,000; platelets 120,000; tourniquet test positive; bleeding time five minutes; coagulation time seven minutes; venom reaction positive. The test was repeatedly positive June 24, July 5 and 10, and negative July 15, August 16 and 18.

Clinical Course: Venom therapy was started June 28 and has been continued constantly since that time. Purpura or ecchymoses became infrequent and disappeared much more quickly than previously. The menstrual periods became moderate in amount and duration. Hematologically there was no change.

This case again illustrates the symptomatic response of a patient to venom therapy and indicates the increase of capillary resistance to hemorrhage by means of the

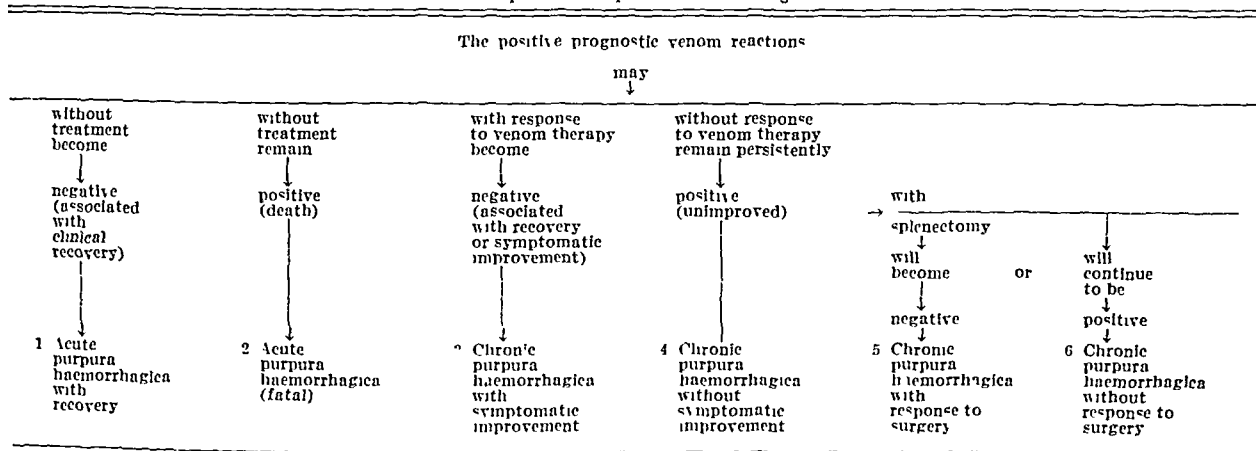
from the nose. The purpurae would appear during or following the epistaxis. The patient was normally developed and well nourished but rather pale; she sat in bed with constant oozing from the nose. Petechial spots were present on the arms, forearms and abdomen.

Laboratory examination, February 23, revealed: hemoglobin 79 per cent, red blood cells 4,650,000; white blood cells 6,400; platelets 20,000; differential count: neutrophils (nonsegmented) 29 per cent; neutrophils (segmented) 49 per cent; eosinophils 2 per cent; lymphocytes 42 per cent; monocytes 5 per cent. The tourniquet test was positive, bleeding time was ten minutes and coagulation time was five minutes; there was no clot retraction, and the prognostic venom reaction was positive.

Clinical Course. The venom test was consistently and markedly positive on several occasions. Because of this and of the

TABLE 5.—*Purpura Haemorrhagica Due to Drugs*

Case	Sex	Age	Date	Venom Reaction	Venom Therapy	Course
1. E. D.	♀	58 yrs	9/ 3/35 9/ 6/35 9/ 9/35 9/12/35 9/14/35	Markedly positive Negative Negative Negative Negative	None	This patient had purpura due to allyl isopropyl acetyl carbamide; immediately recovered when drug was stopped
2. F. G.	♀	48 yrs.	12/10/34 12/21/34 9/16/35 10/20/35	Markedly positive Negative Negative Negative	None	Another purpura due to allyl isopropyl acetyl carbamide; recovered with its removal but when it was given again purpura reappeared
3. M. A.	♀	..	9/21/35	Negative	None	This patient recovered from venom
4. F. P.	♀	55 yrs	12/31/34 2/ 4/35	Markedly positive Negative	None	Purpura possible due to excessive use of phenobarbital
5. I. I.	♂	55 yrs	3/28/35 9/18/35	Positive Negative	Treated for 6 months	Purpura occurred every time chrysarobin was applied
6. J. G.	♂	32 yrs	12/13/35 12/16/35 12/18/35 12/19/35 12/20/35 12/23/35	Positive Markedly positive Delayed positive Negative Negative Negative	None; platelets 25,000 2,000 20,000 40,000 70,000 200,000	Purpura due to allyl isopropyl acetyl carbamide; complete clinical recovery

TABLE 6.—*Diagrammatic Summary. The Prognostic Value of Repeated Intradermal Venom Reactions in Idiopathic Purpura Haemorrhagica*

prognostic venom reaction. Blood taken from this patient August 14 did not contain enough antivenins to neutralize the hemorrhagic action of the titrated venom in a susceptible patient.

CASE 9 (table 2)—I. E., a white woman, aged 46, complained of persistent epistaxis and purpura on admission. Twenty-three years before the patient had a right oophorectomy and two and one-half years before a hysterectomy was performed, following which epistaxis and purpura developed. These symptoms gradually became more severe. Local measures to the nose and transfusions on two occasions were of no avail. For six months before admission to the hospital severe epistaxis occurred every ten to fourteen days with daily oozing of blood

clinical symptoms, venom therapy was instituted. Following several of these injections the epistaxis subsided and there was clinical improvement. The venom reaction became negative one month after the institution of venom therapy. Symptomatically improvement was evident, but no hematologic changes occurred. At no time during the past ten months have the platelets numbered over 40,000. The patient now maintains a constantly negative venom reaction and there is continued clinical improvement with weekly venom injections.

4. *Chronic Purpura Haemorrhagica Without Symptomatic Improvement During Venom Therapy* (table 3).—The four patients in this group, one male and three females, varying in age between 3 years and 48 years,

are examples of chronic thrombocytopenic purpura haemorrhagica that remained refractory to venom therapy. Splenectomy was refused. Repeated prognostic venom reactions were always positive over periods varying from six to sixteen months. These cases will be carefully followed as controls for the splenectomized group.

5. *Recurrent Purpura Haemorrhagica*.—Two patients, both women, aged 32 and 38, had episodes of purpura with all the typical hematologic changes and then completely recovered clinically with a return of normal blood counts. The prognostic venom reaction was positive at the beginning of each recurrence and paralleled the clinical symptoms. These patients received venom therapy during exacerbations of the disease and apparently improved with its use. A typical example follows:

R. P., a white woman, aged 31, has been under observation for five years. The first observed attack of purpura haemorrhagica occurred in 1930. The initial intradermal venom reaction at that time was strongly positive. All the therapeutic venom injections administered during 1930 were given by the intradermal route. She received these injections for one year and showed gradual clinical and hematologic recovery. The patient remained in excellent health for two years and in 1933 became pregnant, with a recurrence of the purpura haemorrhagica. She was advised to have her pregnancy interrupted but refused, and venom therapy was again instituted. Clinical symptoms were well controlled by venom during her pregnancy. The spleen was not palpable, and laboratory examination during the first part of her pregnancy before venom therapy was instituted again revealed platelets 70,000; bleeding time five minutes; clot retraction poor; tourniquet test positive. Venom therapy was continued until the end of her pregnancy. A short time before term the patient improved hematologically and delivered a normal male child.

She remained well until 1935, when she had another recurrence. August 2 the prognostic venom reaction was markedly positive. With resumption of venom therapy clinical improvement occurred, her menstrual periods becoming less prolonged, and the ecchymotic spots gradually disappeared. A prognostic venom reaction September 6 was negative.

The patient then became irregular in her attendance at the clinic and purpuric symptoms again returned, so that on October 4 the prognostic venom reaction was again positive. The injection of larger doses of venom was followed by rapid improvement. The venom reaction on October 20 was again negative.

6. *Chronic Purpura Haemorrhagica (Splenectomies and Splenic Artery Ligations)* (table 4).—The importance of the prognostic venom reaction was most evident in this particular group. Eleven cases were observed. The ages varied from 4½ to 56 years. In this group seven females and two males were splenectomized. In addition there was one female who had splenic artery ligation and another female who had splenic artery ligation followed by splenectomy.

By means of the prognostic venom reaction they could be classified as follows:

- (a) Responding to venom therapy and splenectomy.
- (b) Not responding to venom therapy but to splenectomy.
- (c) Not responding to venom therapy or to splenectomy.

Splenectomy is definitely indicated when patients fail to respond to intensive treatment with snake venom and continue to give a positive intracutaneous venom reaction. The operation may prove beneficial in some of these cases. The postoperative progress of such cases can be accurately predicted by the immediate venom test. A negative reaction after operation has a good prognostic import. In fact, this may precede any noticeable symptomatic or hematologic improvement.

However, persistence of a positive venom reaction after splenectomy indicates that the operation will not prove beneficial to the patient.

Splenectomy can also be offered as an alternative measure to patients manifesting a clinical response to venom therapeutically but who object to a future of continued venom injections. Such patients in our small series experienced both symptomatic and hematologic improvement from the operation.

(a) Typical cases responding to both venom and splenectomy follow:

CASE 2 (table 4).—E. L., a white woman, aged 21, entering the Mount Sinai Hospital, March 1, 1933, complained chiefly of metrorrhagia and purpuric manifestations over a period of seven months. The past and the family history were both negative. During November and January preceding the patient's admission, the menorrhagia was controlled by snake venom therapy. The patient decided to have her spleen removed in order to avoid continuous injections of venom.

Laboratory examination at that time revealed: hemoglobin 67 per cent; red blood cells 3,600,000; white blood cells 4,500; platelets 50,000; differential count: neutrophils (nonsegmented) 7 per cent; neutrophils (segmented) 49 per cent; eosinophils 1 per cent; lymphocytes 41 per cent; monocytes 2 per cent. Bleeding time was six minutes; coagulation time ten minutes; tourniquet test positive; no clot retraction, and a positive prognostic venom reaction. A spleen about twice normal size was removed on March 14. The patient had an uneventful post-operative course and has remained well since. Platelets rose to 500,000 following splenectomy and then gradually returned to normal.

CASE 3 (table 4).—B. W., a white girl, aged 12 years, entering the Mount Sinai Hospital, Sept. 11, 1935, complained chiefly of severe menstrual bleeding. The first menstrual episode was so severe that a transfusion was required. Examination of the blood at that time revealed hemoglobin 60 per cent; red blood cells 3,910,000; white blood cells 9,150; platelets 16,000; differential count: neutrophils (segmented) 47 per cent; eosinophils 10 per cent; lymphocytes 35 per cent; monocytes 5 per cent; reticulocytes 4 per cent; coagulation time thirteen minutes; bleeding time eighteen minutes; positive tourniquet test, and a positive pinch test and prognostic venom reaction. The menorrhagia stopped and the patient was discharged, September 19. Snake venom therapy was then instituted and given twice a week. The second menstrual period was normal. Since the prognostic venom reaction became negative the venom therapy was reduced to one injection of 1 cc. once a week. The third menstrual period was profuse and nosebleeds and bloody stools developed, and she was again hospitalized, December 22. The blood studies were nearly identical with those during the first admission. The prognostic venom reaction was markedly positive again.

The physical examination was negative. Because of the recurrence of bleeding symptoms a splenectomy was advised, since the patient refused further venom therapy. Splenectomy was performed, December 24. December 26 the platelet count was 460,000; December 27, 830,000; December 28, 1,250,000; Jan. 2, 1936; 1,200,000; January 3, 700,000, and January 6, 410,000. Except for a slight bronchopneumonia there was an uneventful recovery.

On the morning of the operation the prognostic venom reaction was positive, and three hours after splenectomy the venom test was negative. At this time the tourniquet test was still positive and there was no hematologic improvement.

(b) The following is a typical example of a case not responding to venom therapy but to splenectomy:

CASE 4 (table 4).—A. R., a white woman, aged 56, entered Mount Sinai Hospital, May 6, 1935, with a history of having had purpura haemorrhagica for twenty-one years. Her chief complaints on admission were marked hematemesis, bloody diarrhea, pallor, marked weakness, palpitation and dyspnea. The family history and past history were negative. Twenty-two years previously, because of marked metrorrhagia, the patient

was curetted without improvement. Nineteen years prior to admission the patient had a hysterectomy. Since then the patient had frequent bleeding from all orifices and had been practically an invalid. Because of a recent severe loss of blood, the patient came to the hospital for a series of transfusions. As she did not respond favorably to venom therapy a splenectomy was advised. The patient was well developed but extremely pale, with generalized purpura and ecchymoses. The gums were markedly spongy, infected and bleeding. The spleen and liver were not felt.

Laboratory examination on admission revealed: hemoglobin 24 per cent; red blood cells 2,100,000; white blood cells 8,300; platelets 30,000; neutrophils 68 per cent; lymphocytes 22 per cent; monocytes 10 per cent; bleeding time eleven minutes; coagulation time eight minutes; tourniquet test positive; no clot retraction; prognostic venom reaction positive. The patient was given three transfusions before a splenectomy was done and withstood the operation well. The postoperative course was uneventful except for the aspiration of 500 cc. of sanguineous fluid from the left pleural cavity. Following the splenectomy the platelets never rose above 60,000 during her stay at the hospital. The venom test became negative the day after operation, and she has maintained a negative test ever since. The patient has been observed for ten months since she left the hospital. Blood studies at the end of the ten months' period showed a negative tourniquet test, a bleeding time of three minutes, and 150,000 platelets. She is no longer an invalid, being able to do her housework for the first time in twenty-two years.

(c) The following case is a typical example of a patient responding neither to venom therapy nor to splenectomy:

CASE 7 (table 4).—J. M., a white girl, aged 4½ years, admitted to Mount Sinai Hospital, July 1, 1933, complained of nosebleeds and ecchymoses for a period of eighteen months. The family history was negative; the past history revealed that since birth the patient had developed large ecchymoses from slight trauma. Sixteen months before admission she had a tonsillectomy and lost a great amount of blood. Since then she had had constant oozing from the mouth, this being associated with tarry stools. The child was admitted to the hospital for a splenectomy, because she was refractory to venom therapy. She was well nourished. There was a generalized purpuric eruption, including the pharyngeal mucous membranes.

Laboratory examination on admission revealed: hemoglobin 45 per cent; red blood cells 2,260,000; white blood cells 43,000; platelets 40,000; differential count: neutrophils (nonsegmented) 3 per cent; neutrophils (segmented) 30 per cent; lymphocytes 66 per cent; monocytes 1 per cent; bleeding time twelve minutes; coagulation time six minutes; tourniquet test positive; no clot retraction; venom test positive. A small spleen and a very small accessory spleen were removed. The postoperative course was attended by several complications: a small hematoma immediately appeared at the lower angle of the wound, blood oozed from the gums and mouth, and a large ecchymotic area appeared on the thigh. Three weeks later gross hematuria occurred and persisted for several days, associated with a rise in temperature to 103 F. This complication gradually subsided and the patient left the hospital eight weeks later without noticeable bleeding tendencies. This case has been followed for more than two years. Clinically the patient has made only slight improvement. She still bleeds from the mouth and gums occasionally and she still gets ecchymoses on trauma. Her prolonged bleeding time is maintained and the platelets have never gone above 50,000 since the splenectomy. The venom test has always been positive, and the patient is still refractory to venom therapy.

**7. Thrombocytopenic Purpura Haemorrhagica Due to Drugs** (table 5).—There are many drugs which may cause thrombocytopenic purpura haemorrhagica, such as neosarphenamine, arsenic, quinine, chrysarobin, benzene, allyl-isopropyl-acetyl-carbamide and gold. The six cases in this group were selected to show that prog-

nostic venom reactions may be a guide for determining the immediate prognosis of a drug purpura. Four of the cases occurred in females and two in males. All the patients were over 35 years of age and they all presented a picture of acute purpura haemorrhagica. Recovery was remarkably rapid when the offending drug was withdrawn. It is of interest to note that case 5 presented a striking specificity of this idiosyncrasy to chrysarobin, as the purpura recurred every time the chrysarobin was applied for psoriasis. Because of the chronic course this patient was treated with venom for a short period. Prognostic venom reactions were always positive during the active manifestations of the syndrome in all these patients. A typical example follows:

CASE 1 (table 5).—E. D., a white woman, aged 63, admitted to the Mount Sinai Hospital Oct. 1, 1935, complained of diffuse ecchymoses and bleeding from the nose, gums and bladder. The family history was negative, and the past history was



Fig. 1 (case 8, table 1).—Positive venom test within thirty minutes after intradermal injection of one unit of moccasin venom in 7 year old boy with acute thrombocytopenic purpura

negative except for ingestion of a proprietary preparation containing allyl-isopropyl-acetyl-carbamide. The patient had been taking this drug for a month previous to admission because of restlessness due to the death of her husband. She had been in her usual state of health until fourteen days previous to admission, when she noticed the development of a number of bruises. She began to bleed from the nose, then the gums, and when blood appeared in the urine she became frightened and came to the hospital. Physical examination was negative except for diffuse purpura, ecchymoses and petechiae scattered in the mucous membranes and in the skin over the entire body.

Laboratory examination, October 3, revealed: hemoglobin 76 per cent; red blood cells 5,000,000; white blood cells 20,000; platelets 20,000; differential count: neutrophils (nonsegmented) 16 per cent; neutrophils (segmented) 62 per cent; basophils 1 per cent; lymphocytes 18 per cent; monocytes 3 per cent. Bleeding time was twenty minutes, the tourniquet test was positive, there was no clot retraction, and the venom test was positive. October 6 the venom reaction to this test was less positive, and it was negative on October 9. The laboratory results, October 9, were hemoglobin 65 per cent; red blood cells 3,700,000; white blood cells 13,500; platelets 260,000;

differential count: neutrophils (nonsegmented) 3 per cent; neutrophils (segmented) 71 per cent; basophils 1 per cent; lymphocytes 18 per cent; monocytes 7 per cent.

## COMMENT

Snake venom did not find a place in rational therapeutics until recently. Rattlesnake venom had previously been advocated in epilepsy, but its value is questionable.<sup>1a</sup> Homeopathy has long included<sup>2</sup> the venom of the Crotalinae (*Lachesis*) in its pharmacopeia for various types of bleeding; it is given orally in homeopathic doses, and experimental evidence seems to indicate that it is easily destroyed by the digestive juices. More recently Monaelesser<sup>3</sup> and others have advocated cobra venom by injection for the control of intractable pain in carcinoma. It has been found that the venom of the Russell viper,<sup>4</sup> the tiger snake,<sup>5</sup> and

as nasal and uterine, and conditions such as Osler's disease and various types of purpura haemorrhagica.<sup>7</sup> The use of moccasin venom in the treatment of hemorrhage was suggested by the observation that certain venoms are capable of producing a refractory state to experimental purpura, known as the Schwartzman phenomenon.<sup>8</sup> This observation led Peck to use the intradermal injection of moccasin venom as a measure of gaging capillary resistance.

Because of the vast difference in the amounts of neurotoxins, hemolysins and hemorrhagins of various venoms and even of the same venom, Witebsky, Peck and Neter<sup>9</sup> devised a means of standardizing the hemorrhagin content of moccasin venom by using the chick embryo. The most reliable standardization for therapeutic use is clinical trial in suitable cases. However, a standardized moccasin venom, if kept in the ice-box, will retain its hemorrhagin content for a number of months.

Standardized venom, when given intradermally, will cause the development of an ecchymotic area in untreated thrombocytopenic purpura haemorrhagica without close relationship to the platelet count. It is well known that the initial symptoms of this disease may appear when the platelets number 5,000 or as high as 100,000. The severity of the disease does not depend on the number of platelets—the so-called threshold value—but more likely on the fundamental principles, such as a functional qualitative capacity of the megalokaryocytes and platelets, and the integrity of the capillaries.

A positive reaction to the venom test may consist of a small capillary rupture only 0.5 cm. in diameter, or it may involve the skin far beyond the injection site. A delayed reaction is a diffuse ecchymosis developing twelve hours or more after injection. This type of reaction is not reliable for diagnostic or prognostic purposes, since some apparently healthy individuals give such a reaction. The negative test shows no hemorrhagic reaction.

One must not depend on a single reaction for prognosis; a single test is an indication of a purpuric state or the existence of a local or generalized capillary fragility. The importance of the test prognostically lies in observing successive injections. Thus, one can observe the persistence and increase of a positive reaction, or the reversal of a positive to a negative reaction, and note the trend of the disease. This is possible because it has been determined that not enough antivenins are formed in the circulating blood to influence the test.

A reversal of a positive reaction to a negative foretells recovery or improvement. This occurred in eight cases of thrombocytopenic purpura haemorrhagica, and in five cases of purpura due to drugs. In two patients with purpura haemorrhagica with fatal termination the prognostic venom reaction was repeatedly intensely

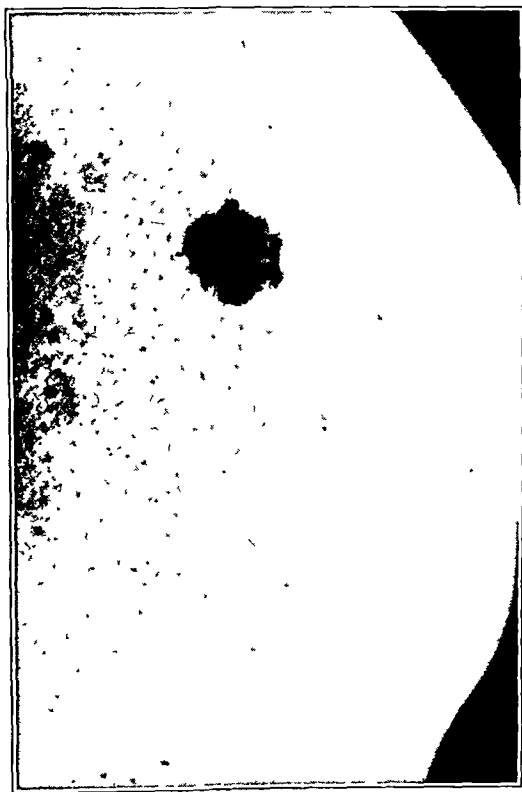


Fig. 2 (case 8, table 4)—R. LaC., a woman, aged 35, with chronic thrombocytopenic purpura, not responding to splenectomy or to venom therapy. A positive venom test one hour after the injection of one unit of moccasin venom intradermally.

*Bothrops atrox*<sup>6</sup> hasten the coagulation of blood in vitro, and they have been recommended for local hemostasis.

Moccasin venom, which we have used in the present study, has earned for itself an important place in modern therapeutics. Its parenteral use has proved to be of definite benefit in various types of bleeding such

1a Spangler, R. H. *Crotalin Treatment of Epilepsy*, New York M. J. 94: 517 (Sept.) 1911.

2 Nash, E. R. *Leaders in Homeopathic Therapeutics*, Philadelphia, Boericke and Tafel, 1913, p. 111.

3 Monaelesser, A., and Taquet, C. *Traitement des algies et des tumeurs par "le venin de cobra"*, Bull. Acad. de med., Paris 109: 371 (March 14) 1933.

4 MacFarlane, R. G. and Barnett, B. *Hemostatic Possibilities of Snake Venoms*, Lancet 2: 625 (Nov. 3) 1934.

5 Rosenthal, S., and Lenke, S. E. *Tiger Snake Venom in the Treatment of Accessible Hemorrhage*, Am. J. M. Sc. 190: 779 (Dec.) 1935.

6 Peck, S. M., Cramer, M. L., and Erf, L. A. *Coagulating Power of Bothrops Atrox Venom on Hemophilic Blood*, Proc. Soc. Exper. Med. & Biol. 32: 1235 (June) 1935.

7 Peck, S. M. *Attempts at Treatment of Hemorrhagic Diathesis by Injection of Snake Venom*, Proc. Soc. Exper. Biol. & Med. 29: 579 (Feb.) 1932. Peck, S. M., and Goldberger, M. A. *The Treatment of Uterine Bleeding with Snake Venom*, Am. J. Obst. & Gynec. 25: 887 (June) 1933. Peck, S. M., and Rosenthal, Nathan. *Effect of Moccasin Snake Venom (Ancistrodon Piscivorus) in Hemorrhagic Conditions*, J. A. M. A. 104: 1066 (March 30) 1935. Dack, Simon. *Treatment of Intractable Nasal Hemorrhage by Injections of Moccasin Snake Venom*, ibid. 105: 412 (Aug. 10) 1935. Goldman, Joseph. *Moccasin Snake Venom Therapy in Recurrent Epistaxes*, to be published. Greenwald, H. M. *Dilute Snake Venom for the Control of Bleeding in Thrombocytopenic Purpura*, Am. J. Dis. Child. 49: 347 (Feb.) 1935.

8 Peck, S. M., and Sobotka, H. *Production of a Refractory State as Concerns the Schwartzman Phenomenon by the Injection of Venom of the Moccasin Snake (Ancistrodon Piscivorus)*, J. Exper. Biol. & Med. 54: 407 (Sept.) 1931.

9 Witebsky, C., Peck, S. M., and Neter, E. *Demonstration of Hemorrhagins in Snake Venoms by Means of Chicken Embryo*, Proc. Soc. Exper. Biol. & Med. 32: 722 (Feb.) 1935.

positive. Thirty-four chronic cases were observed. All these chronic cases had been subjected to subcutaneous venom therapy in adequate dosage (the minimum amount given was 1 cc. of the 1:3,000 standardized moccasin venom given twice a week). The twenty-two patients with a reversal from a positive to a negative reaction in this group (64 per cent) all showed clinical improvement with the venom therapy. However, hematologic improvement did not parallel the symptomatic improvement in such treated cases.

The interval between injections was increased in some of these patients in an effort to determine the minimum maintenance dosage. Occasionally venom injections were discontinued for several months, with the result that the effect of the treatment gradually diminished. This was usually followed by a recurrence of symptoms and a reappearance of a positive reaction to the venom test. Thus, the test indicated the need for the resumption of therapy or more frequent injections.

The patients who were refractory to subcutaneous venom therapy were advised to have a splenectomy. Eleven cases in which splenectomy had been done were studied. Splenectomy was done in three cases that had responded to subcutaneous injections of venom and presented a reversal of the venom test. Recovery occurred in these cases both clinically and hematologically following the operation.

The observation of intracutaneous venom tests and of cases treated with venom proved to be of great importance in cases which demanded more radical treatment, such as splenectomy. Three patients who had responded favorably to subcutaneous injections of venom and had a reversal of the venom test were splenectomized. They recovered both clinically and hematologically following the operation.

Patients who were refractory to subcutaneous venom therapy and showed a persistently positive venom reaction were advised to have splenectomy. Eight patients in this category were splenectomized. Clinical and hematologic recovery occurred in one case. There was symptomatic recovery in two cases and in all three cases there was a reversal of the positive venom test to negative following the operation.

In three cases splenectomy failed to control the purpuric condition. In each case the venom reaction continued to be positive and death followed shortly after the operation.

Although there was postoperative recovery in the tenth case, purpuric manifestations continued and the patient failed to respond to continued venom therapy. The intracutaneous venom reaction also remained positive. In the eleventh case splenectomy was performed several years ago, prior to the use of venom for therapeutic purposes. Clinically the operation proved unsuccessful. This patient continues to have positive venom reactions.

In the treatment of purpura haemorrhagica it is of great importance to test and treat the patient with snake venom, either for the control of the condition or to predict the outcome after splenectomy.

#### SUMMARY

1. An intradermal moccasin snake venom test has been used as a prognostic measure in essential thrombocytopenic purpura haemorrhagica.

2. Persistence of a positive reaction to successive tests, or a reversal to a negative reaction, is of value in determining the trend of the purpuric state.

3. Subcutaneous injections of moccasin snake venom have been employed as a therapeutic measure in chronic purpura haemorrhagica. It apparently has been of value in twenty-two of the thirty-four cases in which it has been used.

4. The effect of subcutaneous venom injections and the trend of the intracutaneous venom test are important for the indication and prognosis of splenectomy.

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## THE INJECTION TREATMENT OF REDUCIBLE HERNIA

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The high incidence of recurrence<sup>1</sup> still found in surgical treatment of hernia led us to investigate the injection method. This method has fallen into disrepute, largely because of the widespread use of proprietary nostrums of uncertain content. There is, nevertheless, a sufficient amount of evidence concerning the possible action of some substances to warrant further investigation.

#### HISTORICAL

Apparently Velpeau of Paris<sup>2</sup> must be given the credit for being the first surgeon to use irritants with the intention of producing a proliferation of new connective tissue to obliterate the inguinal canal. Sometime after 1844 Pancoast<sup>3</sup> reported to the profession his results in thirteen cases of hernia in which he used a cannula through which he introduced iodine and in other cases tincture of cantharides into the inguinal canal. In 1842 Heaton<sup>4</sup> in Boston had used tincture of iodine, using a crude type of instrument, and published a report on his method in 1843. Owing to an unfortunate controversy with the medical profession at that time his work did not receive much attention in this country, and it was not until the year 1877 that he published a book in which he described his treatment. Before that time he had been given a warm reception in Europe, and his work was accepted as a real contribution to surgical advance. This probably explains why the injection method first gained so many adherents in Europe. From the time of Heaton's publication (1877), the flow of literature on hernia non-operatively corrected began to swell perceptibly, notably in the writings of Schwalbe,<sup>5</sup> Janney,<sup>6</sup> Warren,<sup>7</sup> Lannelongue<sup>8</sup> and Ripley.<sup>9</sup> In 1927 Mayer<sup>10</sup> of Detroit published his reports covering twenty-eight years of experience with the use of zinc acetate solu-

From the Department of Surgery, Northwestern University Medical School.

1. Andrews, Edmund, and Bissell, A. D.: *Direct Hernia: A Record of Surgical Failures*, Surg., Gynec. & Obst. **58**:753 (April) 1934.

2. Velpeau, A. A. L. M. (1835), cited by Marey, H. O.: *The Anatomy and Surgical Treatment of Hernia*, New York, D. Appleton & Co., 1892, p. 272.

3. Joseph Pancoast (1844), cited by Marey.<sup>2</sup>

4. Heaton, George: *The Cure of Rupture, Reducible and Irreducible*, Boston, H. O. Houghton & Co., 1877.

5. Schwalbe (1877), cited by Sultan, G.: *Atlas und Grundriss der Unterliebrüche*.

6. Janney, W. F. (1880), cited by Warren,<sup>7</sup> vol. 1.

7. Warren, J. H.: *Hernias Strangulated and Reducible*, Springfield, Ill., Charles N. Thomas, 1881, p. 130.

8. Lannelongue, O. M.: *Un tour du monde*, Librairie Larousse, Paris, 1909, pp. 296-297.

9. Ripley, C. B.: *Splitting the Cord in Indirect Inguinal Hernia*, Illinois M. J. **43**:223 (March) 1923.

10. Mayer, Ignatz: *The Treatment of Hernia by Subcutaneous Injections*, M. J. & Rec. **125**:528 (April 20) 1927, **128**:415 (Oct. 17) 1928.



tion. This work incited new interest in the subject, since he declared himself as having less than a 2 per cent recurrence, and it was not long before others began adding their experiences to the literature on the subject. The more recent work of such men as Wyss,<sup>11</sup> Hall,<sup>12</sup> Wollermann,<sup>13</sup> Jameson,<sup>14</sup> Wolfe,<sup>15</sup> Bratrud,<sup>16</sup> Rice,<sup>17</sup> Quillin<sup>18</sup> and Fowler<sup>19</sup> has given a new impetus to further clinical and experimental research.

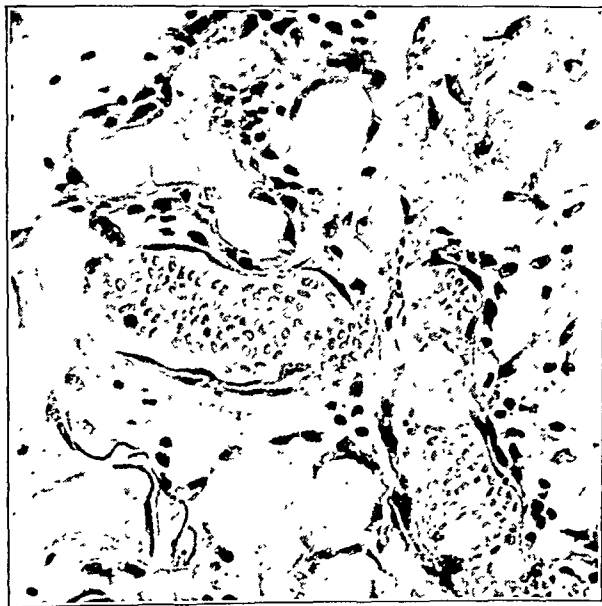


Fig. 1.—Section from tissue one week after injection with solution C, showing proliferating fibroblasts and remnants of lymphocytic infiltration under high power (X 390).

The work reported here was begun in March 1934. At the same time an opportunity was afforded in the experimental surgical laboratory to determine the value of the use of various irritant solutions in the inguinal canal, in the hope of developing solutions that were felt to be most effective in stimulating the production of connective tissue of a permanent nature, without necrosis or abscess formation.

#### EXPERIMENTAL

With the use of dogs we first attempted to see what results would occur when different irritants that we planned to use clinically were injected into the general circulation. Both blood pressure and respiratory graphs were made. These graphs showed that a decided drop in blood pressure occurred at first, followed by a compensatory increase, the normal blood pressure being regained after about thirty to forty minutes. The respiratory rate was accelerated, sometimes as high as 40 per minute. In no case did the animal die. For these tests we used strengths of solutions sometimes as great as twice that which we planned

to use clinically. We then proceeded to study the tissue changes that occur when irritants are injected into muscle and fascia of the inguinal canals of dogs.

Microscopic study made of stained sections of tissue showed that as early as eight hours after an injection of a solution containing 50 per cent phenol in alcohol, in a dosage of from 3 to 10 minims (0.2 to 0.6 cc.) there is a marked exudation of polymorphonuclear and round cells. At one week a section taken from the same area showed many histiocytes. Fine fibroblasts began to make their appearance (fig. 1). Tissue sections studied microscopically, taken from an area that had been injected two weeks previously, showed dense bundles of fibrous tissue. This fibrous tissue becomes more dense in sections studied after longer intervals (from two to four weeks) and becomes adult, mature connective tissue after from six to eight weeks (figs. 2, 3 and 4). These results are similar to those described by Rice,<sup>17</sup> who had used the same irritant. We also found evidence of fat decomposition in the presence of macrophages filled with lipoid granules and the presence of foreign body giant cells. The latter was more constantly found in tissue sections that had been injected with tannic acid. Our experimental work indicates that no matter which of these irritants are used (i. e., alcohol, iodine, tannic acid or phenol, in proportional strength), the same relative reaction occurs, and we feel that permanent fibrous tissue is not developed any more by one irritant than by another. That "layers" of connective tissue can be produced in the inguinal canal after irritants are injected at intervals of two to three days is well demonstrated in our microscopic studies (fig. 3). Old fibrous tissue superimposed on round cell infiltration and new fibroblasts demonstrated to us the possibility of slough of mature connective tissue when the irritant is given in too large doses or given too frequently. We have also noted the absorp-



Fig. 2.—Granulation tissue and maturing fibrous scar after two weeks with solution C under low power (X 115).

tion of a hard fibrotic induration in the inguinal canal of the dog, occurring as late as six months after all irritants had been discontinued.

#### CLINICAL PROCEDURE

Three different solutions labeled solutions A, B and C were used. Solution A contained tannic acid 0.25 Gm., benzyl alcohol 3 cc., thymol 0.5 Gm., grain alcohol

11. Wyss, F.: Die Behandlung der Hernien mit Alkoholinjectionen, Schweiz. med. Wchnschr. 59: 85 (Jan. 26) 1929
12. Hall, J. S. K.: The Eradication of Hernia by Injections, M. J. & Rec. 130: 61 (July 17) 1929.
13. Wollermann: Die Timmermannsche Injectionsbehandlung der Hernien, Aerzt. Rundschau 29: 328, 1929.
14. Jameson, F. S., and Cantala, J.: The Relief of Inguinal Hernia Without Operation, M. J. & Rec. 131: 87 (Jan. 15) 1930
15. Wolfe, R.: The Injection Treatment of Inguinal Hernia, M. J. & Rec. 133: 243 (March 4) 1931.
16. Bratrud, A. F.: Ambulant Treatment of Hernia, Journal-Lancet 53: 673 (Dec. 15) 1933.
17. Rice, C. O.: The Rationale of the Injection Treatment of Hernia, address before Minneapolis Surgical Society, May 2, 1935
18. Quillin, L. J.: The Injection Treatment of Reducible Hernia, Internat. J. Med. & Surg. 47: 394 (Oct.) 1934.
19. Fowler, S. W.: Experience with the Injection Treatment of Hernia, Med. Rec. 141: 387 (April 17) 1935

100 cc., tincture of thuja 4 cc. Solution B contained tannic acid 0.5 Gm., benzyl alcohol 3 cc., thymol 0.5 Gm., and grain alcohol 100 cc. Solution C contained phenol 15 cc., alcohol 7.5 cc., tincture of thuja 7.5 cc. Solutions A and B were given in 5 cc. doses biweekly and solution C was given in doses ranging from 4 to 8 minims (0.26 to 0.52 cc.). The introduction of the irritants in these large doses directly within the peritoneal cavity of the dog was painful for approximately one hour, but no deaths occurred. In sections of the peritoneum removed after from four to five days we noted areas of necrosis with beginning healing. Apparently the exudation produced about the irritant by the peritoneum produces enough protection to limit any extended amount of necrosis of the tissues. We noted no embolic phenomena in any of the animals after numerous injections within both the inguinal canal and the abdominal cavity.

#### CLINICAL HAZARDS

In the review of the literature dealing with the subject of injection treatment of hernia one may gain the impression that the method is practically without complications or hazards. We do not feel that such an impression should go unchallenged. The publication of Goldhahn<sup>20</sup> and his reference therein to the evils of the widespread and unlimited use of injections in all types of cases must make an impression on any one who feels that the method is worth while. But it appears that the cases cited (Goldhahn) must have been complicated by abdominal viscera present within the canal before the injections were made. He does not state whether any truss was used. In other words, either the hernia was not reduced beforehand or the operator failed to recognize an unreduced hernia. The latter problem can more often than not occur. The possibility of forming adhesions within the peritoneal cavity with severe irritants, once the sac has been punctured, may be safely dismissed. Our work in dogs has given us ample proof that such an irritant in small amounts is practically always absorbed. Transfixing the spermatic cord must be considered when one is not absolutely sure of the position of the needle. One of us has seen this done on a patient outside our clinic. The result was severe swelling and pain in the testicle, associated with cramps in the lower part of the abdomen, which lasted for several days and then gradually subsided.

#### SELECTION OF CASES

The series of cases here presented was selected in the following manner: Hernias associated with undescended testicle, sliding hernias and irreducible hernias were ruled out. No attempt was made to treat patients suffering from the following conditions involving the general health: marked obesity, hemophilia, syphilis, neurosis, toxic goiter; patients suffering from chronic severe coughs, and obviously all cases requiring surgery for the associated conditions, such as abdominal tumors, enlarged prostate, large varicocele or hydrocele. It was also a rule that no patient was treated who was previously not relieved of all symptoms by wearing a truss. All patients were carefully examined and the size of the defect in the abdominal wall was noted, as well as the size of the hernia. Also any atrophy of either testicle was carefully noted. The latter was carefully carried

out because critics of this treatment have stated at times that the method was prone to produce testicular atrophy. In our series we found that about 8 per cent of our patients suffered from this condition. It is imperative that a truss be worn from one to two weeks before treatment is started, first, to prevent the treatment being interrupted by local irritation of the skin, and, secondly, to make sure that the hernia can be held reduced at all times. After considerable experimentation with different types of trusses it was found that the spring type with anterior and posterior pressure was the most efficient. This applied to all types of hernia except the umbilical, in which it was necessary to use the circular type to maintain the pad in its proper position. The proper fitting of the truss and its proper adjustment from time to time is one of the most important prerequisites to this treatment. In those cases in which difficulty was experienced in curing the hernia it was invariably found that the truss was at fault in not holding the hernia continuously reduced.

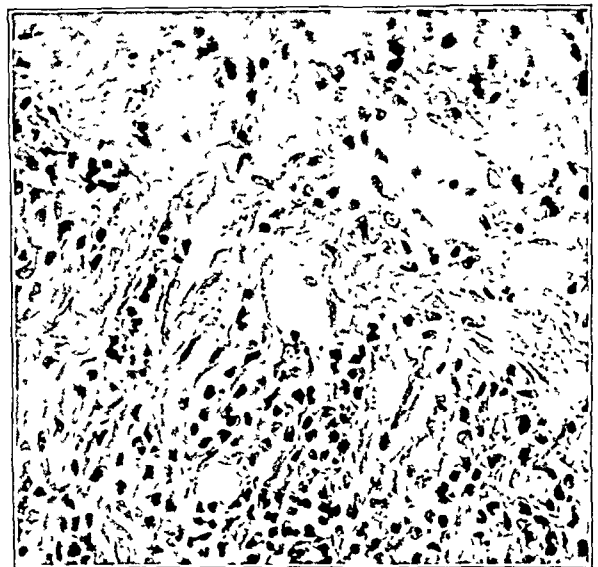


Fig. 3.—High power field of area of injection after three weeks; maturing fibrocytes and remnants of lymphocytic infiltration.

The truss was worn day and night for from one to two weeks before treatment was started and for a varying period after treatment was instituted of from two to four weeks. The truss was then removed only at night. It was then worn during the day until we were satisfied that the hernia was cured. It is far better to wear the truss unnecessarily long than to remove it too early. The patients were instructed to carry on their normal activities while under treatment, many of them doing heavy work, but were cautioned to be sure that the pad was in proper position at all times.

The solutions used in this series were those referred to as solutions B and C. The dosages used were: solution B, from 1 to 3 cc.; solution C, from 4 to 8 minims. With the former solution a preliminary injection of 1 cc. of a 2 per cent procaine hydrochloride solution was first introduced. Then, after a few moments, the needle, which was left in situ, was attached to the syringe and the solution was slowly injected. This technic eliminates any pain. The minimum dosage of both solutions was used in umbilical,

20. Goldhahn, Richard. Ueber schwere Schädigungen nach Bruchbehandlung mittels Alkoholinjektionen. *Klin. Wchnschr.* 9: 1447 (Aug. 2), 1908 (Oct. 18) 1930; 10: 72 (Jan 10) 1931.

femoral and incisional hernias as well as about the internal ring in inguinal hernia. The larger dose was used about the external ring and Hesselbach's triangle in a direct inguinal hernia. For solution B an ordinary 5 cc. syringe was used, while with solution C an ordinary tuberculin syringe was found most satisfactory. A 22 gage needle, preferably with the security anesthesia guard to prevent possible breaking of the needle within the abdomen, was employed.

#### TECHNIC

The injection was carried out in the following manner: The patient was placed in the supine position and the truss was removed and replaced, unassisted, by the patient. The skin was prepared by washing with 40 per cent alcohol, and, after careful examination to make certain that the hernia was reduced, the solution was injected slowly and firm pressure was exerted thereafter for a few minutes. The syringe must be aspirated before the injection is made to make sure that one is not in a blood vessel. It was found that the

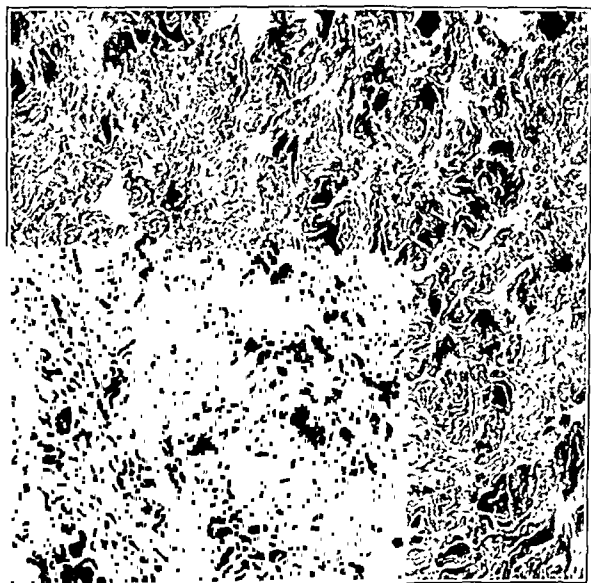


Fig. 4.—Mature connective tissue eight weeks after injection with solution C under low power ( $\times 115$ ).

greater number of our cases were of the inguinal type and therefore the technic will be given in some detail. The following landmarks must be noted: the anterior superior spine, the pubic spine, and a point located just above the midpoint on a line drawn between these two landmarks. The last mentioned represents the position of the internal ring. All injections were made along the entire course of the canal regardless of the type of hernia, because it was noted in some of our cases that when an apparently direct inguinal hernia was treated and the external ring was completely closed subsequent weakness developed about the internal ring and vice versa, so the area through which the hernia protruded was treated first and the remainder of the canal subsequently. It might be added that in the case of direct inguinal hernia the solution was deposited also within Hesselbach's triangle and along the conjoint tendon. In this case the solution was introduced mesial and posterior to the cord. A distinct "give" sensation is experienced as the needle goes through the fascia. When injecting about the external ring it is obviously easier to do this under the direct guidance of the finger,

which is gently inserted therein. In the case of the internal ring one is aware that the point of the needle has entered this area by the fact that, following its introduction, the body of the needle may be moved freely in any direction. In addition to this fact, as a rule, the patient will complain of slight pain along the cord or in the testicle on the side that is being injected. In the case of femoral hernia, the point of the needle is placed in the femoral canal mesial to the surgeon's finger, which is previously placed therein. This, obviously, is necessitated by the proximity of the femoral vessels and nerves. In incisional and umbilical hernia, care was used to deposit the solution directly into the fascia with the hernia well reduced to prevent any injury to a viscus.

In our series of cases we found that the average number of injections required were from eight to twelve, which were given once or twice a week, depending on the reaction. In a very few cases four or five injections seemed to give a firm closure, and in a few cases as high as twenty-four injections were necessary. It was our custom not to remove the truss at night until the whole area seemed firmly closed, and the patient was not allowed to remove the truss permanently until the entire area through which the hernia had presented itself was firm and no impulse could be elicited when the patient coughed in an erect standing position. This last test was not made until we were quite certain that a good closure had been accomplished. All patients were advised to return for a check up three times yearly, to avoid constipation, and to replace the truss if suffering from any unusual or prolonged coughing spells.

Apparent clinical cure has resulted in as few as four injections, but we are quite aware of some absorption of the fibrous tissue, as proved by subsequent check ups in treated cases. The ideal end result of this treatment is the development of a permanent firm closure with fibrous tissue. It is therefore necessary to check these cases after discharge at monthly intervals for six months.

A summary of our cases shows that 350 cases were examined, of which 308 were found suitable for treatment. One hundred and seventy patients are now under active treatment and 138 have been discharged as completely cured. The remaining forty-two patients failed to cooperate. The age range was from 11 to 90 years. It is our custom to have all patients return for a check up about three times yearly. Our recurrent rate in all types of hernia treated has, to date, been 8 per cent. By recurrences we designate as such any with a definite impulse, even though the hernia of its original size has not returned. It might be further stated that when recurrences do result the hernia is invariably much smaller than the original one.

#### COMPLICATIONS

The obvious need for the truss to remain in one position, with steady pressure over the point of exit, led to superficial skin necrosis in ten cases, or 3 per cent. During the healing of these lesions no injections were given, nor was the pressure of the truss relaxed. The areas usually were washed with tincture of green soap and water, then thoroughly shaved, and a dusting powder used before the truss was reapplied. All such lesions healed without difficulty in from ten to twenty days. In twelve of our cases (4 per cent) swelling developed in the cord, associated with tenderness in the testicle; usually such swelling was transient and sub-

sided without special treatment. The question of sterility resulting in such cases has been previously raised.<sup>21</sup> However, we were struck with the high incidence (8 per cent in our series) of extreme or partial atrophy of the testicle, associated with hernia, before any treatment was started. We are inclined to believe that some sterility occurs in untreated cases as well as after surgery and this procedure. No authentic data on this feature have been presented as yet. To date none of our patients have complained of impotence. However, in an endeavor to investigate more thoroughly this (potential) possibility, we intend to check on specimens of semen from patients treated for bilateral hernias. In the total number of injections given in this series of cases only two reactions occurred, in which, we confidently feel, the irritant entered the sac and found its way into the general peritoneal cavity. Both patients complained of severe abdominal pain and weakness. On examination both patients had a weak pulse, a cold sweat and an anxious look, simulating a condition of shock. No special treatment was instituted and all symptoms disappeared after about one hour. Both patients left the clinic after two hours unaided. The possibility of injecting a strong irritant into the contents of an unreduced hernia will always remain a potential hazard with those wishing to employ this technic in the treatment of hernia. Our own experience, and the experience of other writers on the subject, makes us feel that this possibility is not great if due care is used. Nevertheless, we wish again to stress the importance of thoroughly examining the canal before any irritant is introduced into it.

#### CONCLUSIONS

These results indicate that the injection treatment of hernia in selected cases, and with the preparations here employed, carried out with careful attention to technic, has a definite place in the management of hernia. It does not seem in the light of our experience and results reported here that the hazards are greater than those from other forms of treatment. The recurrences following this treatment seem to be considerably less than after surgery. The duration of observation, however, is too short for certain opinion on this problem. When recurrences do result, the further treatment necessary to effect a cure is considerably less than the complete new procedure required by surgery. The injection treatment should be looked on as an aid in attacking the problem of hernia, and it is not our belief that it will supplant surgery more than by eliminating the necessity for operation in certain types of cases.

122 South Michigan Avenue—636 Church Street.

21. Injection Treatment for Hernia, Queries and Minor Notes, J. A. M. A 104:1658 (May 4) 1935.

**Banishing Certain Foods.**—One cannot get the best results by simply trying to avoid fattening foods, for practically every food is more or less fattening when eaten in addition to a dietary already sufficiently rich in calories. The intelligent procedure is not to banish any food simply because of its calories or its reputed fattening power, but to consider the food also with reference to its mineral elements and vitamins. Milk and potatoes are so valuable in these respects that the former should be, and the latter well may be, retained in even a rigorously reducing diet: banish rather such things as sweets and pastries, which are much more concentratedly fattening and have almost no vitamin value. "No calories without vitamins" may serve as a reminder.—Sherman, H. C.: Food and Health, New York, Macmillan Company, 1934.

## REVERSIBLE CARDIAC ENLARGEMENT

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Cardiac enlargement is usually associated with valvular defects or with hypertension. Once established in connection with these diseases, the enlargement is in general irreversible and constitutes a discouraging feature in the treatment of heart disease. It is, however, interesting and encouraging to consider that there are three distinct conditions causing cardiac enlargement in which the heart returns to normal size after specific therapy. These conditions are arteriovenous aneurysm, beriberi and myxedema. It is my purpose in this article to review briefly the cardiac aspects of these diseases and to bring together from the literature reproductions of x-ray films which vividly portray the return of the heart to normal size.

#### ARTERIOVENOUS ANEURYSM

Figure 1, from a report by the Deans,<sup>1</sup> shows the heart shadow before and after the surgical treatment of an arteriovenous aneurysm. The patient complained of shortness of breath and palpitation. There was a pulsating mass in Scarpa's triangle, over which a thrill



Fig. 1.—The heart before (on the left) and after the operative treatment of arteriovenous aneurysm. (From Joseph and J. C. Dean.<sup>1</sup>)

was palpable and a humming noise audible. Manual pressure over the mass (thus occluding the fistulous opening) caused a change in blood pressure from 140/50 to 150/70. The shortness of breath and palpitation entirely disappeared after treatment. The second film, showing the return of the heart shadow to normal size, was made one month after operative treatment of the aneurysm.

#### BERIBERI

Cardiac enlargement in beriberi has long been recognized. A comprehensive investigation of the cardiac and circulatory changes in beriberi was made by Aalsmeer and Wenckebach,<sup>2</sup> the clinical observations being made in Java by Aalsmeer. All the cases of beriberi, even the mildest, showed perceptible enlargement of the heart on roentgen examination. When polyneuritis is absent, the onset of cardiac failure may be acute, leading to the serious and often fatal condition called by the Japanese "soshin." These cases are characterized by the sudden onset of extreme dyspnea, cyanosis, substernal pain and possibly rapid death. Wenckebach is of the opinion that the absence of neuritis is the

1. Dean, Joseph, and Dean, J. C.: Arteriovenous Aneurysm: Its Effect on the Heart, Wisconsin M. J. 33:587 (Aug.) 1934.

2. Aalsmeer, W. C., and Wenckebach, K. F.: Herz und Kreislauf bei der Beri beri Krankheit, Wien. Arch. f. inn. Med. 16:193 (Jan. 20) 1929.

determining factor in these acute cases. Neuritis forces the patient to go to bed, or at least to curtail his activities markedly, and thus protects him from excessive heart strain.

Wenckebach also states that the cardiac enlargement in beriberi is not a true hypertrophy of the muscle fibers but is rather a colloidal imbibition of fluid, analogous to myxedema, and contrasting with the state of free fluid as in ordinary edema.

Figure 2 is from the studies made by Aalsmeer and shows the rapid return of the heart of a beriberi patient



Fig. 2.—The heart before and after the specific treatment of beriberi. (From Aalsmeer and Wenckebach,<sup>2</sup> their figures 9 a and 9 b.)

to normal size on treatment with foods rich in vitamin B. Fifty-two days intervened between the two films.

Beriberi is far from being a disease purely of academic interest in the United States. Scott and Herrmann<sup>3</sup> state that it has been recognized in Louisiana since 1903. The natives of French descent have known it for a much longer time under the name of the "maladie des jambes." These authors state that the differential diagnosis between beriberi and primary myocardial insufficiency is at times very difficult. Riesman and Davidson<sup>4</sup> have reported two cases of beriberi in Philadelphia. Further, the polyneuritis associated with alcoholism is now known to be a vitamin B deficiency<sup>5</sup> rather than the result of a direct toxic action of alcohol on the nerves. Likewise, the polyneuritis sometimes occurring in pregnancy is probably a deficiency disease.<sup>6</sup> Observation on the size of the heart in cases of polyneuritis associated with alcohol and in infants suspected of vitamin B deficiency would be of extreme interest.

#### MYXEDEMA

The heart enlargement often accompanying myxedema has attracted considerable attention in recent years. Figure 3 is an example observed by me of the effect of myxedema on the heart, and the return of the heart to normal size following thyroid therapy.<sup>7</sup> Five months intervened between the two films, though fluoroscopic observations showed that the heart reached normal size much earlier. This particular patient also showed auricular fibrillation. This patient illustrates

well the fallacy of always considering cardiac enlargement irreversible. He had been previously hospitalized and the cardiac enlargement clearly demonstrated by roentgen examination. The enlarged heart had, however, immediately led to the conclusion that his illness was incurable and he had been discharged after brief digitalis medication.

#### COMMENT

These three conditions, so beautifully amenable to specific therapy, must be considered in the differential diagnosis of all cases of cardiac enlargement. Even an arteriovenous aneurysm in Scarpa's triangle and causing heart symptoms and heart enlargement may not be evident on first examination, as is so strongly emphasized in the case reported by the Deans.<sup>1</sup>

It is of course doubtful whether these instances of cardiac enlargement have any bearing on the larger problem of cardiac involvement in hypertension. However, Christian<sup>8</sup> found that only about two thirds of the cases of nonvalvular cardiac enlargement of middle age are related to present or past hypertension, and he states that there are many "unanswerable riddles" in discussing the relation of hypertension to cardiac enlargement. From this it may be inferred that cardiac enlargement in hypertension is not necessarily the benign compensatory process resulting from purely mechanical causes, as generally considered. Riesman and Davidson<sup>4</sup> are strongly of the opinion that there is a nutritional factor in cardiac patients who have repeated attacks of decompensation. The metabolic origin of another cardiac disease, namely, coronary sclerosis, is a seriously considered hypothesis.<sup>9</sup> Possibly along similar lines of investigation the future may demonstrate that our present conception of cardiac enlargement in hypertension as arising purely from mechanical factors is too naive.

#### SUMMARY

X-ray films show the striking return to normal size of enlarged hearts in arteriovenous aneurysm, beriberi and myxedema. These show that an enlarged heart is

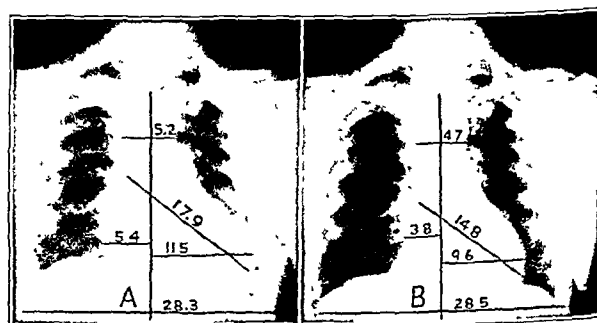


Fig. 3.—The heart in myxedema, before and after specific treatment with thyroid.

not always a permanent irreversible condition. The three diseases are readily amenable to specific treatment and they must be considered either as primary or as contributing factors in the differential diagnosis of all enlarged hearts.

223 Masonic Temple.

1. Christian, H. A. Chronic Nonvalvular Cardiac Disease or Chronic Myocardial Insufficiency and Its Therapeutic Management, *Ann. Int. Med.* 5:95 (Aug.) 1931.

2. Leary, Timothy. Atherosclerosis, the Important Form of Arteriosclerosis, a Metabolic Disease, *J. A. M. A.* 105:475 (Aug. 17) 1935.

3. Scott, L. C., and Herrmann, G. R. Beriberi ("Maladie des Jambes") in Louisiana, *J. A. M. A.* 90:2083 (June 30) 1928.

4. Riesman, David, and Davidson, H. S. Beriberi Following Drastic Voluntary Dietary Restriction, *J. A. M. A.* 102:2000 (June 16) 1934.

5. Minot, G. R.; Strauss, M. B., and Cobb, Stanley. "Alcoholic" Polyneuritis: Dietary Deficiency as a Factor in Its Production, *New England J. Med.* 208:1244 (June 15) 1933.

6. Strauss, M. B., and McDonald, W. J. Polyneuritis of Pregnancy, a Dietary Deficiency Disorder, *J. A. M. A.* 100:1320 (April 29) 1933.

7. Walker, J. E. Hypothyroidism Associated with Cardiac Enlargement ("Myxedema Heart") and Auricular Fibrillation, *J. A. M. A.* 100:1025 (April 1) 1935.

## A SUMMARY OF REGIONAL ILEITIS

WITH REPORT OF A CASE OF COLONIC  
INVOLVEMENT AND SUGGESTION  
OF A NEW TERM

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AND

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For the past three decades a number of granulomatous conditions of the intestine, possessing common symptomatic and pathologic features, have been described. Clinically and microscopically they were mistaken for malignant conditions but, on microscopic examination, proved to be benign, inflammatory lesions. They were also frequently mistaken for appendiceal conditions.

It was not until 1932 that they were described as a distinct entity by Crohn, Ginzburg and Oppenheimer<sup>1</sup> as "regional ileitis." A year later Harris and his collaborators,<sup>2</sup> because of the cicatrizing, inflammatory process and the probable involvement of other portions of the intestinal tract, suggested the term "cicatrizing enteritis."

No definite etiologic factor or factors have been isolated. Infection has been thought of as a possible cause, especially certain of the anaerobic groups. The disease occurs most frequently in young adults, more commonly in males. However, cases have been reported from the ages of 4½ years to 40 years. The usual site of disorder is the terminal ileum, although other portions of the intestine may be involved.

The pathologic condition is "one of proliferation of the hematopoietic cells, and mainly proliferation and irritation of the somatic cells of the intestinal wall."<sup>3</sup> The picture is that of inflammation of the ileac mucosa with subsequent ulceration. The intestinal coats are edematous and thickened. The mesentery is thickened, and the glands are hyperplastic. Eventually, owing to the fibrostenotic process, narrowing of the lumen results. There is a marked tendency toward perforation, and the formation of a localized mass in the right lower quadrant and of a fistula into the adjoining intestine. Microscopic section reveals acute, subacute or chronic inflammatory reactions. Giant and epithelioid cells are present in the later stages.

Clinically, the condition presents the following symptomatic characteristics:

Fever, generally low (highest 103 F.), fluctuating with periods of normality.

Diarrhea, one or two stools daily, containing mucus and at times occult blood.

Anorexia, with progressive loss of weight, secondary anemia and malaise.

Pain, dull and cramplike in the right lower quadrant. If an ileosigmoid fistula exists, the pain may be felt in the left lower quadrant.

Leukocytosis, moderate.

Pulse, rapid.

Stenosis, manifested by constipation with some vomiting, distention, and a palpable mass in the right lower quadrant.

Roentgenologic investigation is the most essential means of establishing a diagnosis and, in conjunction

with the clinical symptomatology, makes a rather definite roentgen picture.

Kantor,<sup>3</sup> in his recent article on "regional ileitis," summarizes the roentgen technic and his observations as follows:

The usual oral opaque meal is employed, as well as a barium sulfate enema. Serial observations are made at hourly intervals from the period just before the cecum fills to the normal period of emptying. This is about three to nine hours after the ingestion of the opaque meal. The patient is then permitted to partake of an ordinary meal as soon as the stomach is empty.

The abnormalities, as revealed by the roentgenologic studies, may be in either the ileum or the colon or both. The changes in the latter may be reflex in nature—that of a secondary spasm—or may show actual progression of the disease from the ileum.

The principal changes in the ileum, briefly, are:

(a) Filling defects just proximal to the cecum.



Fig. 1.—Dilatation of the proximal position of the ileum at three and one-quarter hours.

(b) Abnormality in contour of the terminal loop of the ileum.

(c) Dilatation of ileac loops just proximal to the lesion. (This is demonstrable in the stenotic phase.)

Kantor describes a roentgenologic sign which, though not pathognomonic of the disease, is strikingly suggestive and characteristic. He called this the "string sign," a thin, slightly irregular linear shadow suggesting a cotton string in appearance and extending from the region of the last visualized loop of ileum through the entire extent of the filling defect, and ending at the ileocecal valve. It represents the attenuated barium filling of the greatly contracted intestinal lumen. Weber has recently offered the term "twisted cord appearance" as an alternative for "string sign."

The absence of the string sign does not exclude the disease. In such an instance an effort should be made to demonstrate the filling defects in the terminal ileum and the result accepted as a suggestive finding.

Several other conditions may confuse both the roentgenologist and the clinician and necessitate a differential roentgenologic and clinical diagnosis. The string sign

1. Crohn, B. B.; Ginzburg, Leon, and Oppenheimer, G. D.: Regional Ileitis, *J. A. M. A.* 99: 1323-1328 (Oct. 15) 1932.

2. Harris, F. I.; Bell, G. H., and Brunn, H.: Chronic Cicatrizing Enteritis, Regional Ileitis (Crohn), *Surg., Gynec. & Obst.* 57: 637-645 (Nov.) 1933.

3. Kantor, J. L.: Regional (Terminal) Ileitis. Its Roentgen Diagnosis, *J. A. M. A.* 103: 2016-2021 (Dec. 29) 1934.

has been observed in sarcomas and in syphilis of the terminal ileum. A filled appendix dipping into the pelvis may likewise be confusing.

Clinical differentiation includes ulcerative colitis, typhilitis, lymphosarcoma, intestinal or mesenteric tuberculosis, Hodgkin's disease, actinomycosis or malignancy of the terminal ileum, and appendiceal disorders.

Medical treatment is usually unsatisfactory. Surgical intervention is the treatment of choice.

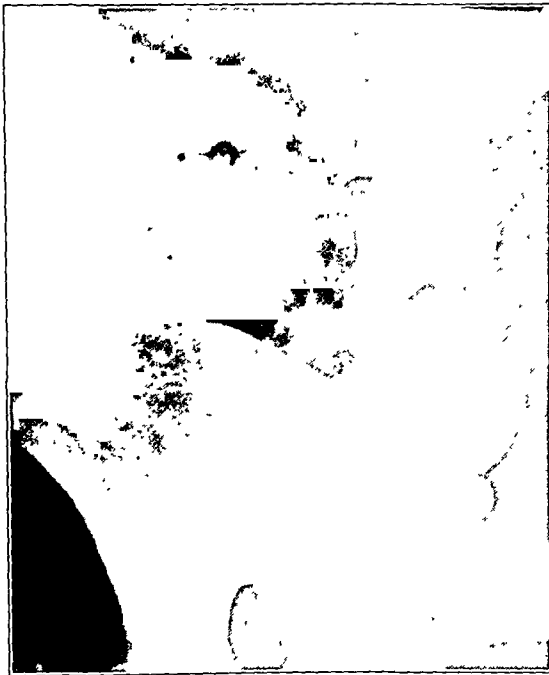


Fig. 2.—String sign, involvement of colon, at five and three-quarters hours.

The case to be considered shows a typical clinical and roentgenologic picture of regional ileitis, with added involvement up to but not including the distal portion of the transverse colon. The patient had been previously treated for four years for subacute bacterial endocarditis (despite negative blood cultures) and renal disease.

#### REPORT OF CASE

Mrs. B. R., white, aged 24, seen Nov. 11, 1934, complained of fever, cramplike pains in the right lower quadrant, and diarrhea. She had daily two or three loose, offensive bowel movements containing a slight amount of mucus but no blood. This had been going on for two weeks, although the cramps had been experienced at irregular intervals for the past five or six years. There was no history of surgery, an accident or venereal disease. One pregnancy ended as a spontaneous abortion at three months. The menstrual history was negative save for a two months amenorrhea following the attacks. Her mother had died of metastatic carcinoma of the breast.

In 1930 the patient had been hospitalized for ten weeks because of fever, rapid pulse, occasional cramps of the right lower quadrant and offensive stools. In her description of the hospitalization she stated that her condition was diagnosed as "heart disease." Later, as bacteriuria was observed, cystoscopy was resorted to and the kidneys were "washed out." This produced some relief, but the highly offensive diarrhea and tachycardia persisted.

The essential physical manifestations, November 11, were: temperature, 99.5 F.; pulse, 110; blood pressure, 120 systolic and 75 diastolic. There was a soft, systolic mitral murmur. A definite, palpable mass was found in the right lower quadrant of the abdomen, very tender to slight palpation, not freely movable, with the maximum points of tenderness in the region of the cecum. Borborygmi were easily auscultated over the entire colon, especially over the ileocecal area. The urine was

normal; leukocytes numbered 14,000; examination of the stool was negative for ameba. The clinical impression was that the patient was suffering from either an appendiceal abscess or colitis.

The patient was placed at complete rest. Except for a rapid pulse and one daily foul-smelling watery stool, with a feeling of relief after defecation, improvement was noted until December 6. On that day, four hours after dinner (which included smoked fish, mashed potatoes and a cold chocolate drink), nausea and vomiting occurred, with a repetition the next day, following a somewhat similar meal. From this time on there was a temperature range of from 99.4 F. in the morning, to 100.5 F. in the afternoon and 100.1 F. in the evening. With such symptoms, investigation was renewed. A more intensive laboratory and roentgenologic investigation was undertaken.

Laboratory examination gave the following results: The Kahn, Wassermann, complement fixation, and Aschheim-Zondek tests were negative. Agglutination tests with the antigens of *Bacillus typhosus*, *B. paratyphosus* A and B, *B. dysenteriae* and *B. enteritidis*, and abortus, melitensis and porcine groups of *Brucella* were negative. Blood cultures for these groups, as well as for staphylococcus and streptococcus organisms, were also negative.

Urine analyses at intervals of three days showed occasional hyaline casts but were otherwise negative.

A blood count showed 4,200,000 erythrocytes with 75 per cent hemoglobin, and 9,100 leukocytes, with 76 per cent neutrophils and 24 per cent lymphocytes. On fecal analysis the milk culture for *Bacillus Welchii* on three occasions showed 4, 2 and 3 plus Gram stain was from 50 to 75 per cent positive. In one instance *Streptococcus viridans* was isolated in culture.

December 17 a barium sulfate enema was administered, but visualization extended only to include the distal portion of the transverse colon. Marked distention of these portions was revealed, but the remainder could not be demonstrated.

Enema administration and examination could not be continued, as the patient complained of violent cramps. The same night she developed a temperature of 103.5 F., with marked chills and pains in the right lower quadrant. Relief was obtained by the use of narcotics. At this time the report of her previous hospital sojourn was received and is quoted here in its entirety:

"Miss B. S. [now Mrs. B. R.] was under observation at the Hospital from April 1 to June 17, 1930. At that time



Fig. 3.—Sagittal section showing ulceration and polyposis.

her complaint was fever. After making complete studies we came to the conclusion that she had a subacute bacterial endocarditis. This diagnosis was made in spite of the fact that repeated blood cultures were negative.

"After being at the hospital for four weeks, we observed that she had an unusually large amount of bacteria in her urine. Cystoscopy revealed an occlusion of one of the ureters, and a partial blockage in the other. They were both dilated with miraculous improvement of the patient. Repeated dilation brought about a complete cure."



Since the patient complained of symptoms similar to the ones in the foregoing report, it occurred to us that a possible urinary condition might exist. To exclude this, cystoscopy was performed, followed by pyelography. The examination was negative, the flat plate, however, showing definite shadows of increased density in the cecum and ascending colon areas. Investigation of the cecum at a later date was deemed advisable.

Jan. 28, 1935, the patient felt better, and it became possible to proceed with the complete roentgenologic examination of the gastro-intestinal tract. Roentgenologic studies revealed



Fig. 4.—Margin of an ulcer; X 80.

nothing abnormal in the chest, esophagus, stomach or duodenum. At three and one-quarter hours there was some dilatation of the proximal portion of the ileum.

At five hours the terminal ileum showed many filling defects, suggestive of polyposis, and a narrowing just about the ileocecal valve, the cecum being contracted.

At five and one-half hours there was a suggestion of a "string sign," the cecum, ascending colon, hepatic flexure and proximal half of the transverse colon showing defects suggestive of polyposis. There was still a gastric residue at this time.

At five and three-quarter and six and one-half hours there was definite demonstration of the "string sign" as well as a definite involvement of the colon up to the midportion of the transverse colon. The remainder of the colon was negative.

Roentgenologic conclusions were that there was terminal or regional ileitis with involvement up to the midportion of the transverse colon, and polyposis.

Combining the clinical, roentgenologic and laboratory observations and recognizing the colonic extension, we consider "ileocolitis ulcerosa chronica" as a phrase more truly descriptive of the picture.

Treatment consisted of general supportive measure, symptomatic medication, ultraviolet radiation, and 1:4,000 acriflavine hydrochloride retention enemas. Relief, at its best, was merely transitory.

February 10, pain in the region of the ileum was experienced and became so severe as to necessitate the use of opium. February 13 witnessed another attack, this time very suggestive of an obstruction.

Because of the recurrence and progressive severity of these pains and the poor results obtained with medical management, surgical intervention was deemed the final treatment of choice, and the patient was operated on by Dr. Alfred Strauss, February 18.

Dr. Alfred Strauss and Dr. Herman Strauss reported on the removal of the lower part of the ileum, the ascending and part of the transverse colon as follows:

A right rectus incision was made. The cecum and transverse colon were brought forward. Before opening the abdomen under anesthesia one could palpate the colon as a hollow tumor mass through the abdomen. When the abdomen was opened a typical regional ileitis was found. About 8 to 10 inches (20 to 25 cm.) of the terminal ileum, cecum and ascending colon, and about half the transverse colon was a solid infiltrated tumor mass, verifying the roentgen examination.

The parietal peritoneum was freed laterally. The mesentery was clamped and cut. The ileum was taken well wide of the inflammatory area. Clamps were placed and amputation was done. The ends were carefully cauterized and covered. The mesentery was clamped, cut and ligated in the usual manner, to the middle of the transverse colon. The bowel was transversely clamped and cut and the ends were carefully cauterized and phenolized. The mesentery was sutured, the parietal peritoneum was recovered, and the two cut ends were brought through the incision. The incision was closed in the usual manner. The operation was done rapidly with good hemostasis, the time being one hour and ten minutes. The patient left the operating room in good condition.

The clinical diagnosis was terminal ileitis.

A pathologic diagnosis, furnished by Dr. Otto Saphir, February 22, on microscopic examination, was marked acute pseudomembranous and ulcerating enterocolitis. Histologically, a bacillary dysentery infection was suggested.

The gross specimen consisted of a terminal portion of the ileum, measuring 18 cm., and a cecum, with attached appendix, measuring 30 cm. in diameter. The serosa of the ileum was a purple red, smooth and shiny. The serosa of the cecum was completely covered by fatty tissue. The walls of both ileum and cecum seemed thickened, especially in the region above the ileocecal valve. The mucosa of the last 8 cm. of the ileum was markedly thickened and polypoid. The polyps had very wide bases and appeared fused. Occasionally a bridge of mucosa could be demonstrated between the polyps. The mucosa between the polyps was a grayish white. The mucosa of the



Fig. 5.—Polypoid elevation (high)

cecum was similarly involved. Many of the polyps here had narrow bases.

Under gas anesthesia the old scar was excised, June 4. The two ends of the bowel were easily freed from the belly wall. Then an end-to-end anastomosis was made with gastro-intestinal and interrupted silk sutures. The abdominal wall was closed with interrupted chromic catgut, with a Penrose tube brought out through the incision.

The patient made an uneventful recovery. She gained 30 pounds (13.6 Kg.) and at present is free from all symptoms.



## SUMMARY

1. The picture of regional ileitis is that of dull pain in the right lower quadrant, low grade intermittent fever, slight diarrhea, anorexia, anemia and rapid pulse.

2. Roentgenologic studies of the ileum reveal characteristic manifestations.

3. In cases in which the pathologic condition extends to the colon, we suggest the term "ileocolitis ulcerosa chronica."

4. The treatment of choice is surgery.

185 North Wabash Avenue—104 South Michigan Avenue.

## Clinical Notes, Suggestions and New Instruments

### SAFE LIGATURE OF THE RENAL PEDICLE WITH CLAMPS OF NEW DESIGN

HUGH H. YOUNG, M.D., BALTIMORE

Safe handling of the renal pedicle in cases requiring nephrectomy often furnishes a serious problem to the surgeon. Too often have one or more vessels slipped from the grasp of the clamps when the pedicle has been divided. Sometimes only one vessel has escaped and given the surgeon a painful period

have advocated leaving clamps on the pedicle and removing them about four days later, but I know of one instance, when, even after more than four days, removal of the clamps was followed by a fatal gush of blood from a greatly dilated renal vein in a case in which nephrectomy had been done for a huge tumor.

Inspection of pedicles which have been crushed by strong clamps shows that the tissue remaining between the jaws of the clamps is so greatly reduced that when the ligature is tied the amount of tissue within it is minimal. The problem is to insure that the ligature will not slip. Conceding that two well placed ligatures of heavy chromic catgut are requisite, the question is how to prevent their slipping off the pedicle.

After having tried various procedures, I present herewith some specially designed clamps which I believe answer the problem of safe ligature of the renal pedicle. The technic and *modus operandi* of the individual clamps are so well shown in Mr. Didusch's drawings that further description is scarcely necessary. As seen here, three clamps are employed. The first (No. 1) is placed fairly deep, but still not too close to the aorta or vena cava. As seen in figure 1, each blade of the first clamp is cut away obliquely on the concave border, so that the surfaces, which come together, are thus narrowed. The second clamp is cut away obliquely on the convex border. When the blades of clamp 1 are forcibly brought together across a pedicle, the obliquity of the outer concave edges crowds the tissue of the pedicle outward and the clamp inward (fig. 2). The second clamp is cut away on the convex border and, when applied, the tendency is for the clamp to be pushed outward

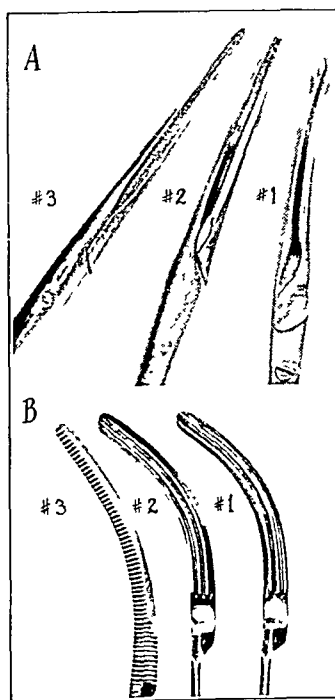


Fig. 1.—Young's pedicle clamps with oblique cut away of adjacent borders. The blades of clamp 1 are cut away obliquely on the concave border and the blades of clamp 3 on the convex border. Clamp 2 is similarly cut.

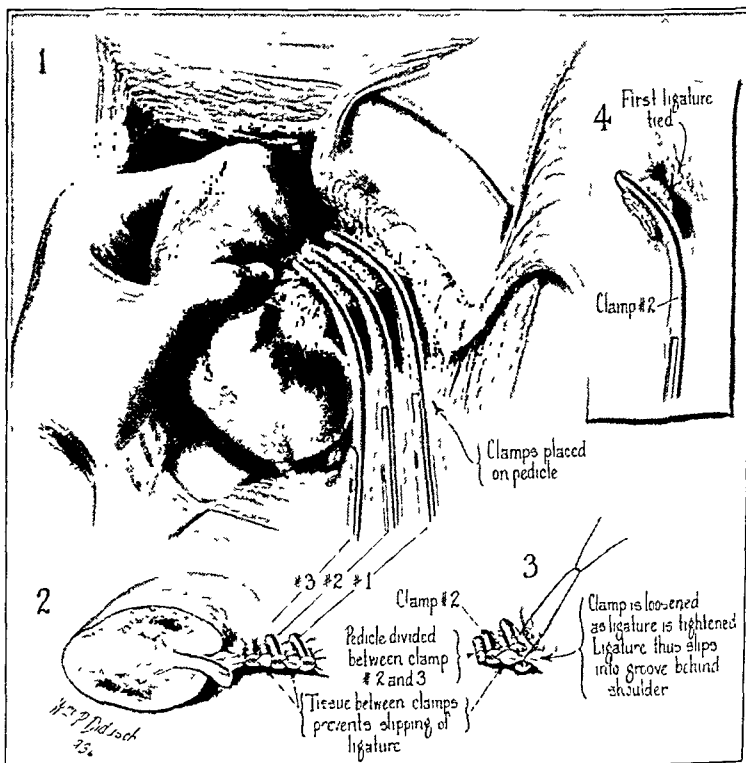


Fig. 2.—1, the new clamps are shown on the pedicle. In sectional view, 2, the humps or ridges of tissue forced up by the cut-away clamp blades are depicted. Placing the ligature in the groove, left by releasing the clamp, is shown in sectional view 3, and in 4.

while searching to stop the bleeding and successfully place a ligature. In one of my cases the vessels retracted so deeply behind the colon that it was impossible to find them.

Some surgeons have held that each individual vessel should be isolated and ligated, but they are often matted together in inflammatory or fibrous masses, and, in attempts to isolate them, tears are made which further complicate the problem. Owing to the dangers of ligatures slipping, some surgeons

while the tissues between the two clamps are forced up in the form of a prominent transverse ridge on each surface of the pedicle (2, fig. 2). The application of these clamps thus automatically produces a transverse ridge or shoulder of tissue between them.

I prefer to apply a third clamp next to the renal pelvis and kidney to insure against cutting into these structures. It is particularly important in malignant and tuberculous cases for these structures not to be opened when the pedicle is divided. I therefore prefer to place the third clamp externally next to

the kidney. The clamp I use is thinner and straighter than the others, but each blade is also cut away obliquely along its external border, thus insuring the production of a transverse hump or ridge of tissue between the second and third clamp. The operator, being certain that such has occurred, may safely cut with a knife or scissors as close as possible to the external clamp (2, fig 2) and then proceed to ligate the pedicle.

It is important that the first or deeper ligature should sink into the bottom of the two grooves produced by the clamp.

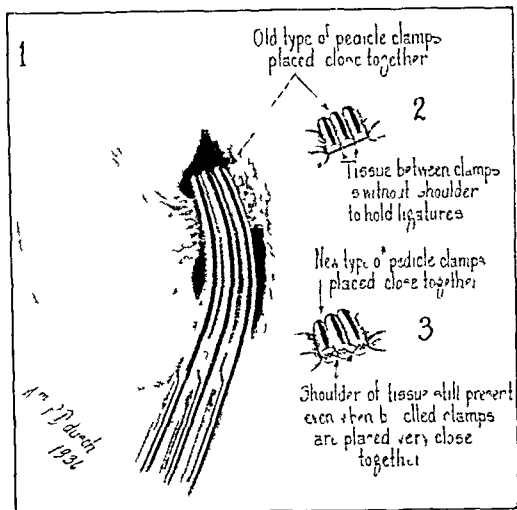


Fig 3—Three ordinary pedicle clamps are shown placed close together. Sectional view 2 shows the thinly compressed pedicle and absence of ridges or shoulders of tissue between clamps.

After a strand of No. 3 chromic catgut has been placed around the pedicle beneath the deepest clamp (No. 1) the clamp is slowly loosened as the first knot is tied (3, fig 2). This insures that the ligature slips into the groove and does not remain on the uncompressed pedicle beyond it. As this knot is drawn tight, the clamp is removed, the second and third knots are tied and the ligature is cut. An inspection should then be made to make sure that the technic has been satisfactory and that the ligature is tight. The second ligature is then placed by the same method, clamp 2 being slowly released and removed as the ligature is tied. After this procedure one sees a mass or shoulder of tissue lying external to each ligature (4, fig 2). The shoulders effectively prevent slipping of the ligatures or escape of a vessel from the grasp of the clamps before ligatures have been placed. These renal pedicle clamps Nos. 1 and 2 are provided with the longitudinal grooves along the opposing surfaces of the blades instead of transverse grooves because we have found that they are better adapted for pedicle clamps.

The most important detail is the oblique edge on opposite sides of the two pedicle clamps which effectively forces up a mass of tissue between the clamps and furnishes the shoulder for the important first ligature. The shoulder for the second ligature is produced by the design of the third clamp and its straighter form (less curve), which

automatically leaves more tissue between it and the second clamp. The same scheme might also be used for the first and second clamps, the second clamp forming somewhat of an arc across the more curving first clamp and thus insuring a mass of tissue between them, but I believe that the oblique cutting away of the opposite edges of these two clamps accomplishes a better result. Clamps of parallel curvature are more easily placed, especially in short pedicles and more difficult positions beneath large renal masses.

In figure 3 the ordinary pedicle clamps have been placed close together. The sectional view, 2, shows the thin crushed pedicle with little or no tissue between the clamps. It is to be noted that little or no shoulder is present to hold either the first or the second ligature. Figure 4 is a longitudinal section of two pedicles that have been clamped, hematoxylin stain. Note mass of tissue between areas clamped by new instruments. It seems evident that cases of ligature slipping which have been reported not infrequently have occurred as a result of the failure of the operator to secure a shoulder behind which to tie his ligature and thus prevent its slipping. By being careful to see that such shoulders are secured for every pedicle ligature, either with the special obliquely cut clamps presented herewith, as shown in sectional view 3 or by other technical methods described herein, I believe it should be possible to prevent the many accidents, some with fatal ending, that have occurred in surgical practice. Similar technic may be applied to vessels and pedicles requiring ligation in other parts of the body.

#### DERMATITIS MEDICAMENTOSA DUE TO QUININE

R O SETTLE, M.D., WAUPUN, WIS.

H. W., a white man, aged 23, presented himself at the dispensary, April 8, 1932, for treatment of a skin eruption. He reported the presence of an itching, burning eruption of the hands of twelve hours' duration. He stated that he had not recently exposed his hands to any unusual irritant substance and that such a condition had never occurred before. His dentist had extracted a tooth for him the morning before, that evening he had taken two tablets of a proprietary nature (Anacin) containing acetophenetidin, acetylsalicylic acid, caffeine and quinine sulfate, which had been given him by the dentist to relieve any pain he might have following the extraction.

The patient was well developed and in apparently robust health, except that he held his hands out in front of him with the fingers spread, as though to lessen the discomfort. On the palms of both hands were found several lesions of the skin of a somewhat varied character, the most fully developed being a bulla with an acute inflammatory base about 3 cm in diameter, as shown in the accompanying illustration. Others were erythematous patches with varying degrees of bleb formation in their centers. Four such lesions were found on the palmar surface of each hand. Further examination disclosed a somewhat similar lesion in the center of the tongue, which had occurred at the same time but without bleb formation. General physical examination revealed no abnormal manifestations, except for a blood pressure of 160 systolic, 80 diastolic, a weight of 226 pounds (102 Kg.), several suspicious teeth and a recently emptied tooth socket, absent achilles tendon reflexes, and a slight enlargement of the thyroid. The blood Wassermann reaction was negative and a blood count and urinalysis were negative. He had no fever. Previous medical records of the patient disclosed that he had received antisyphilitic treatment for a considerable period was released from treatment after becoming serologically negative and had remained so in the interim. A diagnosis of essential hypertension had been made at one time, the systolic pressure had varied between 150 and 190 over a period of several years. He had had rheumatic fever in childhood. Two years earlier he had been under observation for a suspected psychosis, which had never developed.

The dermatitis of the hands was treated by incision and débridement of the blebs and the application of antiseptic and soothing ointments. Healing was complete in four weeks without scarring or pigmentation.

The patient reported fourteen months later, June 6, 1933, with identically the same condition, the eruption again having occurred after a visit to the dentist and the ingestion of several

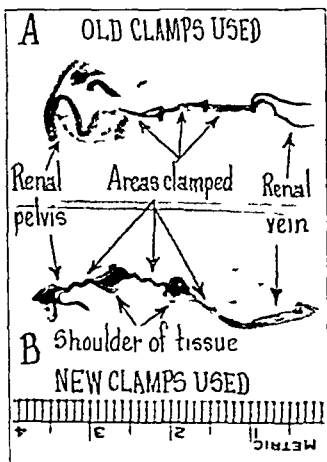


Fig 4—A renal pedicle which had been clamped with ordinary pedicle clamps. This is a longitudinal section mounted and stained. Note how thin the tissues of the pedicle have become and the very little elevation of tissue between areas clamped. B same—new clamps used. Note the fairly considerable mass of tissue between the clamped areas. This insures that the ligatures will not slip.

Anacin tablets. There had been no tooth extraction at this visit, however. Lesions occurred in precisely the same location as before but with a greater degree of bleb formation. Also, several new lesions were found on the hands and one on the back of the trunk. All healed completely as before, without scarring or pigmentation, but required several weeks in the process.

Two subsequent attacks followed, one Nov. 6, 1933, and another Feb. 2, 1934. These attacks had not been preceded by a dental treatment or the use of Anacin. However, shortly



Appearance of lesions and blebs on hands.

before the last appearance of the dermatitis he had had a cold and had taken several cold tablets that were prescribed for him. When the eruption occurred the last time, the patient was hospitalized and it was discovered that he had a low fever, which persisted throughout the acute stage. After healing was practically complete a search for a causative agent was begun. Several of the ingredient drugs of the Anacin and cold tablets had been tried without effect when it was noticed that the only ingredient common to the two was quinine. A patch test on the arm with an alcoholic solution of quinine sulfate resulted in only a very mild erythema. A scratch test with the same solution on the other arm the next day, however, caused an intense erythema around the scratch and a sudden exacerbation of the subjective symptoms at the site of the healing lesions on the hands; i. e., marked pruritus and burning lasting several hours. When complete healing had resulted, February 26, the patient was given a capsule containing 2 grains (0.13 Gm.) of quinine sulfate. Intense burning and itching of the hands occurred within three hours. Within twelve hours there was erythema at the site of the previous lesions, and within twenty-four hours the condition had been completely reproduced as before. Photophobia and a stinging sensation in the eyes appeared as new symptoms following the oral administration of the quinine.

An interesting observation was the recurrence of the lesions each time in the exact locations as before, with almost identically the same configuration, but in different stages of development. That is, several of the lesions at the first outbreak did not become bullate, but at each succeeding appearance of the condition larger and larger blebs developed. At each subsequent appearance of the dermatitis one or two new lesions would be found, almost all being confined to the hands, those not on the hands were few and scattered and did not form blebs but remained as erythematous patches about 2 cm in diameter. The lesion in the center of the tongue, resembling a mucous patch with an inflammatory base, recurred each time.

After the patient was informed that he possessed an idiosyncrasy to quinine he volunteered the information that while serving in the army in the tropics he had taken quinine daily as a prophylactic for a considerable period of time without untoward effect. This history lends weight to the idea that the patient had an acquired sensitization to the drug. By avoiding the ingestion of quinine he has had no further recurrence of the skin trouble to date.

Wisconsin State Prison

## AN UNUSUAL CASE OF TERATOMA TESTIS

LLOYD F. CRAVER, M.D., AND FRED W. STEWART, M.D.  
Attending Physician and Associate Pathologist, Respectively,  
Memorial Hospital  
NEW YORK

### REPORT OF CASE

**History.**—C. F. S., a high school boy, aged 15 years, applied at the Memorial Hospital, May 24, 1935, having been referred by his local physician, Dr. W. R. Janeway, of St. George, Staten Island. The chief complaints were dyspnea and pain in the right shoulder and chest. The father and mother were living and well. The maternal grandmother died of cancer of the uterus. The maternal grandfather died of tuberculosis. The patient had measles, pertussis and varicella in infancy, an appendectomy in 1931 and tonsillectomy in 1932.

For two months prior to admission to the clinic the boy had complained of pronounced fatigue following the gymnasium period in school. Three and a half weeks before admission he had one day shortness of breath and pain in the right shoulder and right chest. After resting in bed one day he returned to school apparently in good health, but a week later he again complained of the same sort of pain and of dyspnea. Two weeks before admission to the Memorial Hospital clinic he had been admitted to another hospital, where an x-ray film of the chest disclosed a large mediastinal mass, displacing the heart to the left and projecting well into the right side of the chest. He had no cough and had lost no weight.

**Physical Examination.**—The patient was apparently in fairly good general condition. Examination of the eyes, ears, nose and throat gave negative results. In the neck were a few very small lymph nodes barely palpable in the left posterior cervical chain. The blood pressure was 110 systolic, 60 diastolic. The heart rate was 88. There were no murmurs. Breath-



Fig 1—Gross appearance of mediastinal tumor.

sounds were decreased over the entire right side, especially posteriorly below the level of the fourth dorsal vertebra. Dulness was observed over the right side of the chest posteriorly and laterally at the base. Anteriorly, the mediastinal dulness at the level of the heart extended four fingerbreadths to the right of the sternum. Examination of the abdomen was negative. The testicles were atrophic, about one-fourth the normal size.<sup>1</sup> A roentgenogram of the chest disclosed numerous dense

<sup>1</sup> The patient's mother subsequently informed us that he had never had mumps.

large and small rounded shadows suggesting metastatic deposits. Blood examination revealed: hemoglobin, 85 per cent; erythrocytes, 4,480,000; leukocytes, 15,800; polymorphonuclear cells, 71 per cent; large lymphocytes, 5 per cent; small lymphocytes, 17 per cent; transitional cells, 5 per cent; eosinophils, 2 per cent.

A provisional diagnosis of metastatic intrathoracic malignant tumor, primary, unknown, was made.

As an attempt at palliation, high voltage roentgen therapy, 300 roentgens five times to each of four quadrants of the chest, anteriorly and posteriorly, was given at daily intervals.



Fig. 2.—Typical choriocarcinomatous appearance as shown in all metastases.

May 28, four days after the patient's admission to the clinic, speculation concerning the association in an adolescent male of marked testicular atrophy with multiple intrathoracic metastatic deposits resembling those seen in cases of teratoma testis led to our suggestion that this patient might have some testicular tissue elsewhere than in the scrotum which had given rise to a teratoma. While we regarded our own suggestion as rather fanciful, we decided to have the urine tested for the follicle stimulating factor. To our surprise the report was that at least 10,000 mouse units was present per liter of urine. This indicated the presence of a teratoma and suggested choriocarcinoma.

*Course.*—At the middle of the cycle of roentgen treatments on June 19 the patient complained of severe frontal headaches. The next day he was obliged to discontinue treatment because of his poor general condition.

June 23 he was admitted to the ward, being disoriented and incontinent. The pupils were widely dilated. The deep tendon reflexes were exaggerated, and there was a questionably positive Babinski sign bilaterally. Spinal tap showed persistently bloody fluid under increased pressure.

The next day, June 24, just one month following admission to the clinic, he died.

*Autopsy.*—The subject was a well developed, rather emaciated white boy. Rigor was absent. The pupils were equal but dilated. There was no superficial palpable adenopathy.

The tissues of the anterior mediastinum were edematous. Overlying the entire anterior pericardium, attached to it and to the diaphragm, and fusing inseparably with that portion of

the right lung overlying the heart, was a bulky, soft, cystic, reddish to brownish red, very friable, hemorrhagic tumor (fig. 1). Its position was too low for thymoma and furthermore it failed to show the characteristic involvement of the great vessels at the base of the heart. Throughout the lung parenchyma of both sides were numerous similar hemorrhagic tumor nodules. Dissection of the bronchi failed to reveal any areas of ulceration that might indicate bronchogenic origin. Numerous nodules of tumor appeared on the pleural surfaces, parietal and visceral, and a bulky mass was attached to the periosteum and muscles of the ninth and tenth ribs and interspaces. Uninvolved areas of pleura showed a gelatinous edema. No evidences of pneumonia were found. The mediastinal lymph nodes were clear.

Aside from marked congestion of the liver, spleen and kidneys, and two small hemorrhagic metastases in the dome of the liver, the entire abdominal viscera were negative.

Both testes were small, very firm and atrophic. No tubules could be seen. The seminal vessels were atrophic, the prostate was normal. The right testis was of homogeneous color and consistency throughout. In the left testis, similar in all other respects to the right, were two small nodules. The upper of the two, situated near the rete, was a small whitish cyst 3 mm. in diameter. The lower, about 1 cm. removed from the former, appeared like a small focus of mucinous tissue not more than a millimeter in diameter. After hardening, the entire testis was cut in serial slices with a razor and nothing else suggestive of a primary tumor could be found. Search was made for pinpoint hemorrhagic areas or foci of pigment but without avail.



Fig. 3.—Diffuse interstitial cell hyperplasia characteristic of both testes. Rare atrophic testicular tubules.

The immediate cause of death appeared to have been increased intracranial pressure, the result of cerebral metastases with hemorrhage. The pituitary was grossly and microscopically normal.

Histologically the main tumor within the thorax proved to be a classic choriocarcinoma, as were of course the other metastases (fig. 2). Both testes were completely atrophic. Very rare degenerated nonfunctional testicular tubules were found in the midst of a generalized bilateral diffuse overgrowth of large interstitial cells (fig. 3). The two distinct nodules

described in the left testis were of great interest. The upper one consisted of a cyst lined by sloughing stratified squamous epithelium as in a cholesteatoma. The very small mucoid area proved to be an adult-looking branching mucous gland with fully developed ducts (fig. 4). No evidence of other teratoid structure was found.

One is therefore probably justified in assuming that in the early stage of the teratoma a choriocarcinomatous portion reached the systemic circulation with fatal results, whereas any residue in the testis disappeared probably through hemorrhagic necrosis. The remainder of the primary tumor remained quiescent in the form of a small cholesteatomatous cyst and a minute area of adult mucous glands.

Blood obtained at autopsy was assayed for the follicle stimulating factor in the urologic laboratories (Dr. R. S. Ferguson) and reported as yielding 250,000 mouse units per liter.



Fig. 4.—Single adult mucous gland which with a cholesteatomatous cyst constituted the entire testicular tumor residue.

#### COMMENT

The foregoing case report is almost completely analogous with that pictured in De Vries' atlas<sup>2</sup> and reported in the thesis of den Hartog.<sup>3</sup> In that case the only rudiment of teratoma found consisted of a small pigmented area, which they identified as retinal pigment. Adjacent to it was a small cyst 5 mm. in diameter, which proved to be an abscess. The extraordinary interstitial cell hyperplasia in the present case was not found in that of De Vries and den Hartog. The latter writer mentions only a slight increase of interstitial cells. The case furthermore suggests that of Prym,<sup>4</sup> who described choriocarcinomatous metastases from a small tumor of the testis, which had undergone complete local healing by sclerosis, and once more raises questions of interpretation in reports of extragenital choriocarcinoma.

Central Park West at One Hundred and Sixth Street.

2. De Vries, W. M. *Atlas of Selected Cases of Pathological Anatomy*, Amsterdam, J. H. de Bussv, Ltd., 1933, p. 58.

3. den Hartog, B. J. C. *Het choriocarcinoma malignum van den man en zijn biologische beteekenis*, Thesis, Amsterdam, J. H. de Bussv, Ltd., 1933, p. 60.

4. Prym, P. *Spontanheilung eines bösartigen wahrscheinlich choriocarcinomatösen Gewächses im Hoden*, Virchows Arch f. path. Anat. 265: 239, 1927.

#### URETERO-INTESTINAL IMPLANTATION.

GEORGE W. WRIGHT, M.D., AUGUSTA, GA.

Increasing interest in uretero-intestinal implantation might warrant a review of this case, especially because of the observations made at autopsy six months after operation.

C. H. F., a white man, aged 44, admitted to the surgical service of the University Hospital, Jan. 26, 1935, complained of the symptoms of an intractable cystitis of nine months'

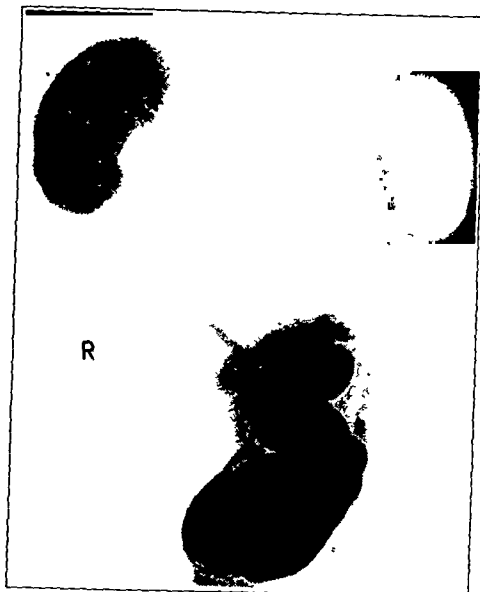


Fig. 1.—Appearance of specimen after bowel had been filled with sodium iodide solution. Note that no reflux occurred of sodium iodide solution from the bowel into the ureters.

duration. The patient passed small amounts of cloudy, usually bloody, urine every ten to thirty minutes during the day and every hour or two at night. There was sharp pain radiating down the shaft of the penis during the act of micturition and



Fig. 2.—After injection of ureters with sodium iodide solution: moderate dilatation of renal calices and of the ureters.

sharp, burning perineal, deep pelvic and suprapubic pain immediately after voiding. All symptoms had become progressively worse, and at the time of admission there was constant strangury and dribbling of urine from the urethra. Loss of weight amounted to 35 pounds (16 Kg.).

From the Department of Surgery of the University of Georgia School of Medicine.

During the three months prior to admission the patient had experienced several attacks of pain in the region of the right kidney, accompanied by elevation of temperature.

The patient was fairly well developed but somewhat wasted; the facies was drawn and anxious, and the skin dry and pale. The weight was 120 pounds (54.4 Kg.), the blood pressure 104 systolic, 70 diastolic, the temperature 98.2 F., and the pulse 70. There was tenderness on pressure at the right costovertebral angle and in the suprapubic area. The lower pole of the right kidney was palpable and tender. Rectal examination revealed that the tone of the sphincter was good, and that the prostate was slightly enlarged and boggy.

The urine was a reddish brown and quite turbid because of the presence of gross amounts of blood and mucus. It showed a specific gravity of 1.028, and a three plus albumin. Microscopic examination revealed innumerable red blood cells, leukocytes and mucous shreds. Examination of the blood showed red blood cells 4,100,000, white blood cells 7,000 and hemoglobin 75 per cent. Nonprotein nitrogen, uric acid and sugar determinations of the blood were within normal limits. The Wassermann reaction was negative.

Cystoscopic examination showed severe cystitis with marked contraction of the bladder. An extensive, infiltrating new growth was found involving the trigon, the region of the left ureteral orifice, and extending upward toward the dome of the bladder. A large, fungating, ulcerated area occupied the center of the tumor. The right ureteral orifice was several times the usual size. The left ureteral orifice was not located. The right ureter was catheterized and a specimen from the kidney contained from 40 to 50 leukocytes, a few red blood cells and 1 or 2 granular casts per high power field. A section of tissue was removed from the new growth for biopsy. The diagnosis was infiltrating carcinoma of the bladder and right pyelonephritis.

Retrograde pyelography revealed considerable dilatation of the minor calices of the right kidney. Cystography, following the injection of 50 cc. of sodium iodide solution, showed considerable contraction of the bladder, its margins irregular and the lower 7 cm. of the right ureter filled and dilated. Excretory urography demonstrated moderate dilatation of the renal calices on both sides.

February 4, a simultaneous, bilateral ureteral transplantation into the rectosigmoid was done according to the second method of Coffey,<sup>1</sup> size 12 F. ureteral catheters being used. Specimens of urine collected from each of the catheters on the day of operation contained from 50 to 75 leukocytes and an occasional granular cast per high power field. Convalescence was uneventful, the right catheter being removed on the tenth post-operative day and the left catheter on the eleventh day.

During the succeeding weeks and months the patient experienced complete relief from all symptoms existing prior to operation. He returned to work and gained 30 pounds (13.6 Kg.) but was not entirely willing to submit to cystectomy. Urine was passed from the rectum every four to six hours during the day and once at night, but there was no leakage of urine through the anus. Nonprotein nitrogen and uric acid determinations of the blood at regular intervals were within normal limits. Phenolsulfonphthalein excretion in the urine passed from the intestine in two hours was 40 per cent. Intensive roentgen therapy was administered at regular intervals for treatment of the bladder tumor.

August 8 an exploratory laparotomy was done because of intestinal obstruction of twelve hours' duration. Volvulus of the terminal ileum was found and released. Because its color appeared good, the involved section of intestine was not resected. A catheter enterostomy was done above the site of the volvulus. Death occurred on the fifth postoperative day.

At autopsy,<sup>2</sup> a few hours after death, the kidneys, ureters and segment of intestine into which the ureters had been transplanted were removed intact. The proximal end of the segment was occluded by a heavy gauze ligature, the intestine was then completely filled with sodium iodide solution and the distal end was ligated. Considerable pressure was made on the filled segment before a roentgenogram of the complete specimen (fig. 1) was obtained. There was no reflux of the radiopaque material into the ureters. The ureters were next

injected with sodium iodide solution and a roentgenogram was obtained (fig. 2). Moderate dilatation of the calices of each kidney as well as moderate enlargement of the ureters was demonstrated. The dilatation of the calices appeared to be no greater than the moderate dilatation observed before uretero-intestinal implantation.

The total weight of the two kidneys was 450 Gm. The capsule of each stripped with slight difficulty; the surfaces were slightly granular and presented many irregular indentations. The renal pelves and calices were of normal appearance. The cortical markings were distinct and regular, though the cortex was observed as slightly irregular in thickness. Microscopic examination revealed chronic pyelonephritis with moderate scarring. The colon and upper portion of the rectum above the site of ureteral implantation showed nothing unusual. Below the site of operation the rectum was somewhat dilated and the mucosa smoothed out. There was no evidence of ulceration. The bladder was markedly contracted but otherwise normal. Apparently the cause of death was necrobiosis of the terminal ileum with thrombosis of the mesenteric vessels, peritonitis and bronchopneumonia.

#### COMMENT

The case here reported is illustrative of the feasibility of uretero-intestinal implantation. The moderate degree of hydronephrosis said to occur following simultaneous bilateral operation in which ureteral catheters are necessarily employed was not observed in this case. Despite the existence of bilateral pyelonephritis prior to as well as at the time of operation, no gross renal damage was demonstrable at autopsy six months later. One might reasonably conclude that the condition of the kidneys had improved. Roentgen therapy and complete rest had apparently cured the bladder tumor.

753 Broad Street.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

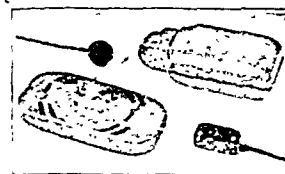
### RADIOEAR DE LUXE HEARING AID, TYPE B-20, ACCEPTABLE

Manufacturer: E. A. Myers and Sons, Pittsburgh.

The Type B-20 Radioear De Luxe is an electrically operated, wearable, artificial hearing aid. The outfit consists essentially of a microphone, an amplifier, a battery supply, and an air or bone conduction receiver.

The microphone employs the simple telephone hook-up principle, modified to the manufacturer's design. The "intensifier" is an auxiliary amplifier which mechanically and electrically increases the amplitude of the electrical output of the microphone.

The power is obtained either from special hearing aid batteries or from three standard flashlight cells; for the latter cells, a battery case is supplied as standard equipment. The efficiency of the instrument is practically independent of either



Radioear De Luxe Hearing Aid.

of these two sources of battery supply; it depends on the proper operating voltage, and this can be obtained either with the small flashlight cells or with the larger hearing-aid battery. The hearing-aid battery, because of its larger size, gives longer service per battery unit; but, if the smaller cells are changed when they depreciate below the recommended operating voltage, the smaller and less expensive flashlight cells are as efficient as the special battery.

The principle of operation is the same for either the miniature air conduction receiver or the bone conduction receiver, as in each case the electrical impulses are converted by the receiver into mechanical impulses. In the air conduction receiver this converted energy is applied in the conventional manner through the middle ear, and with the bone conduction receiver the mechanical structure of the receiver is such that satisfactory

1. Coffey, R. C.: Transplantation of the Ureters into the Large Intestine. Surg., Gynec. & Obst., 47: 593-621 (Nov.) 1928.  
2. Autopsy was performed by Dr. F. H. Van Wagoner of the Department of Pathology of the University of Georgia School of Medicine.

results are secured by the application of the receiver unit to the mastoid or other cranial bones. The miniature air conduction receiver is held in place either by one of the Radioear adapters or by an individually molded ear piece made from a plaster impression of the ear. The bone conduction receiver is retained in operating position by a headband.

This unit was tested under actual conditions by an investigator selected by the Council, who considered the device satisfactory.

When special hearing aid batteries are sold for hearing units, the Council believes that the battery terminals should be standardized so that a battery, no matter where purchased, will fit all makes of hearing aids. Furthermore, the Council believes that, when these devices are prescribed or sold, the company should permit the patient to try them and be certain that they will fit his specific type of deafness under the particular circumstances in which he is most desirous of aid.

In view of the results of the investigation of this unit the Council voted to include the Radioear De Luxe Hearing Aid (Type B-20) in its list of accepted devices.

### FISCHERQUARTZ ULTRAVIOLET LAMP, MODEL NO. 77, ACCEPTABLE

Manufacturer: The Fischer Corporation, Glendale, Calif.

The Fischerquartz Ultraviolet Lamp, Model No. 77, is a "cold quartz" ultraviolet generator and consists of a tube of fused quartz about 7 mm. in outer diameter, bent into three concentric, hexagonal rings, the outer one being about 4½ inches in diameter. Directly back of this grid ("burner") is a flat, etched, aluminum reflector, 8½ inches in diameter, around the edge of which is a flange of bright metal, about 10 inches in diameter and 1½ inches in depth.

The transformer used to operate the "burner" is placed in the base of the support of the lamp. The lamp in its reflector is attached to an extension arm and clamped to the upright support, which permits projecting the radiation of the lamp in various directions.

In a physical laboratory acceptable to the Council, the erythemogenic ultraviolet radiation emitted by the lamp in its mounting was measured, in absolute units, by means of balanced thermopile and filters, in accordance with international procedure.

At a distance of 2 feet from the front edge of the quartz tube (the "burner"), the energy flux of wavelengths shorter than and including 3,130 angstroms was 1,050 ergs per square centimeter per second ( $105 \mu\text{W}/\text{cm}^2$ ). Of this amount about 97 per cent is contained in the strong resonance emission line of mercury vapor at 2,537 angstroms.

Assuming an erythemogenic efficiency of 50 to 55 per cent at the 2,937 angstrom line the calculated time of exposure to produce a threshold (M. P. E.) erythema is about seven minutes.

Exposure of small areas (2 by 6 mm.) of the unpigmented inside upper arm at a distance of 2 feet from the lamp, for intervals of from five to twenty minutes, produced a decided reddening of the skin in seven minutes. The twenty-minute exposure was overexposed and sore to touch.

Since the erythema test was made on a skin of average pigmentation, it is evident that a blond-skinned person should not be exposed longer than about five minutes, at a distance of 2 feet from the burner of this type of lamp.

The intensity of the ultraviolet is above the minimum for acceptance adopted by the Council. With the understanding that this lamp is to be used for irradiation of the body (not applicable for cavity irradiation) for therapeutic purposes, under the guidance of a qualified physician, the lamp was recommended for acceptance by the Council's clinical investigator.

The Council wishes to make it clear that such a lamp has nothing in common with "sun lamps" and that it is no more applicable than other small therapeutic lamps, for home use under the directions of a physician.

In view of the favorable report on this unit, the Council on Physical Therapy voted to include the Fischerquartz Ultraviolet Lamp, Model No. 77, in its list of accepted apparatus.

## Council on Pharmacy and Chemistry

### ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry of the American Medical Association held its annual meeting at the Palmer House, Chicago, Friday and Saturday, March 13 and 14, 1936. Those present were:

Dr. David Barr	Dr. Ernest E. Irons
Dr. J. Howard Brown	Dr. Paul Nicholas Leech
Dr. E. M. Bailey	Dr. G. W. McCoy
Dr. H. N. Cole	Dr. E. M. Nelson
Dr. S. W. Clausen	Dr. W. W. Palmer
Dr. C. W. Edmunds	Dr. William C. Rose
Dr. Morris Fishbein	Dr. Torald Sollmann
Dr. E. M. K. Gelling	

Prof. W. E. Anderson of Yale University and Dr. Olin West, General Manager, were also present.

Dr. Torald Sollmann was elected chairman of the Council and Dr. W. W. Palmer was elected vice chairman.

Among the many items discussed during the meeting, the following may be of interest both to physicians and to manufacturers:

*Note of Appreciation to Dr. Reid Hunt.*—The following communication, signed by all the members of the Council attending the meeting, was sent to Dr. Reid Hunt, who recently resigned.

The Council in session recalls the many years in which it was guided and inspired by your leadership. Your presence and wise counsel are greatly missed.

The Council sends greetings and best wishes for the coming years.

*Federation of the Councils and Reorganization of the Work.*—The Council discussed extensively the plans for the reorganization of the Council on Pharmacy and Chemistry, the Council on Physical Therapy and the Committee on Foods. The reorganization contemplates a federation of these groups particularly for administrative purposes and as a means of handling overlapping problems. The reorganization is not for the purpose of amalgamation. The plans of the headquarters building have been designed to take care of a more closely unified executive control. There has been appointed a Cooperative Committee on Policy, Rules and Procedure representing the three groups, whose purpose it is to make suggestions to the respective groups on problems of mutual interest. The committee is composed of Dr. E. M. Bailey, Dr. John S. Coulter, Dr. Morris Fishbein, Dr. E. E. Irons, Dr. Paul Nicholas Leech and, ex officio, Dr. F. C. Bing and Mr. Howard Carter. The Council on Pharmacy and Chemistry concurred in the recommendation of the Cooperative Committee on Policy, Rules and Procedure that certain recommendations be made to the Board of Trustees concerning the executive details of the work on reorganization.

*Seals of the Councils.*—The Cooperative Committee on Policy, Rules and Procedure recommended to the Council on Pharmacy and Chemistry and also to the other councils that the separate seals of the individual councils be retained. The Council adopted the recommendation.

*Vitamins.*—The Council considered the question of when and how much clinical data should be required before accepting vitamin preparations. The referee on vitamin preparations presented the following report:

Clinical data may not be required under the two following conditions: (1) when the product belongs to a class in which experience has already shown that a close correlation exists between biologic or chemical assays and clinical effects and (2) when the product is to be used only for purposes already established by clinical experience. Examples of such products are cod liver oil, halibut liver oil, viosterol (made in the usual way, but not ergosterol activated by novel methods or dissolved in novel solvents).

Clinical data should be required under the following conditions: 1. When biologic or chemical assays of the class of product cannot (as yet) be regarded as closely correlated with clinical effects, for example: (a) Certain concentrates or highly purified vitamin preparations not yet thoroughly tried in clinical practice, such as purified vitamin A, carotene, cevitamic acid, crystalline vitamin B<sub>1</sub>. There is every reason to believe that such products will sooner or later be so well tried that clinical data may no longer have to be submitted, but that exact chemical, physical



Fischerquartz  
Ultraviolet  
Lamp, Model  
No. 77.



and biologic standardization will suffice. But at the present time, exact clinical data on absorption, the best means for administration, stability, etc., are incomplete. (b) Certain foodstuffs fortified with vitamins. At the present time there is no convincing clinical evidence clearly justifying the claims made by some manufacturers for the activity ascribed to the several constituents of their foods.

2 Clinical data are also urgently indicated when vitamin products are advocated for use in treatment of conditions not clearly due to vitamin deficiency in the ordinary sense; for example, lowered resistance to infection, chronic arthritis, dental caries and rheumatic fever.

3 Complex artificial mixtures of vitamins together with other substances, often referred to as "shotgun vitamin preparations," should not be accepted without convincing clinical evidence of their value, and of the necessity for them.

4 Vitamin preparations made by new or unusual methods should be accepted only when biologic assay and clinical data establish their activity.

The Council adopted the report of the referee as an expression of the policy of the Council in reference to the clinical testing of vitamins in vitamin-containing preparations.

*Series of Articles on Vitamin Preparations*—The Council voted that in cooperation with the Committee on Foods there be appointed an editorial committee under whose supervision there will be devised a contemplated series of articles on vitamins.

*Allowable Claims for Vitamins*—The Council discussed the statement on the allowable claims for vitamins. This statement has been discussed elsewhere. (See THE JOURNAL, May 16, 1936, p. 1732.)

The Council also considered the matter of dosage of cod liver oil for infants and lay advertising of vitamin-containing preparations. (See THE JOURNAL, May 16, 1936, p. 1732.)

*Liver Preparations*—The Council again considered the matter of the labeling and marketing of liver preparations. The consensus of the Council was that the published statement on labeling has been found satisfactory (THE JOURNAL, Oct. 19, 1935, p. 1269). In view of present evidence the Council maintained the opinion that the guinea-pig test that has been proposed by certain investigators is not practical for purpose of N. N. R. standards.

*Articles on Glandular Physiology and Therapy*—It was reported that approximately 1,500 copies of the book "Glandular Physiology and Therapy" had been sold up to March first and that requests had been received from nine countries for privileges of translation.

A progress report was also made of the work being done by the Advisory Committee on the Nomenclature of Endocrine Principles. The reports formulated by this committee are to be published shortly. (See this issue, p. 1808.)

*Therapeutic Research*—The chairman of the Committee on Therapeutic Research, Dr. C. W. Edmunds, reported in detail the work done by that group during the past year. The committee has continued to follow the previous policy of granting a sum generally between \$100 and \$200 for the purchase of special material as an aid in fostering research. The number of applications considerably exceeded the number of grants that could be made. The Council voted that the report of the committee be received and adopted and that appreciation be expressed to the members of the committee for the excellent way in which their work was carried out.

*Aminophylline Preparations*—The minutes of the annual meeting of the Council for 1935 carried the following statement:

*Advertising for Aminophylline*—The Council discussed the difficulty in determining the exact clinical status of Aminophylline. It felt that some advertising claims for the product carried overoptimistic implications.

After extensive discussion the Council adopted the following statement:

It has been claimed that in certain cases relief of pain has followed the use of theophylline preparations in cardiac conditions. The evidence that this was due to the theophylline is not convincing, and there is no evidence that the improvement, if it occurred, was due to coronary dilatation.

The claims in the advertising of accepted products of aminophylline will therefore be judged in accordance with this decision.

*Sterility of Catgut Sutures*—The committee of the Council on Pharmacy and Chemistry in charge of the investigation of catgut sutures presented a progress report of the work under way. It is anticipated that the results of the investigation may be available within the next nine months.

*The Nomenclature of Bacteriologic Products*—The Council voted (a) that the Council recognize as acceptable for the nomenclature of bacteria the generic names proposed in the final report of the committee of the Society of American Bacteriologists on characterization and classification of bacterial types (J. Bact. 5:191, 1920); (b) that these names be used in New and Nonofficial Remedies and other publications of the Council; (c) that the use of "common names" not used in a generic sense, and the use of newer names for subdivisions of the genus *Bacterium*, be also permitted, and (d) that this action shall not preclude the use of names of products required in government licenses when used on package labels, package enclosures, advertising, reports of the Council, or as headings for descriptions of products in New and Nonofficial Remedies, provided such names are followed by names acceptable to the Council.

*Ergot*—There was summed up for the Council the present situation with reference to the new alkaloid of ergot. The four investigators, each of whom independently discovered an alkaloid of ergot, published a statement (Science 83:206 [Feb. 28] 1936) that their products were identical. In view of this, the Council deemed it necessary to coin a new nonproprietary and not therapeutically suggestive name for the ergot alkaloid—"Ergonovine." The action of the Council was published in THE JOURNAL, March 21, 1936, p. 1008.

*Personal Endorsement Signatures*—On one or two occasions pharmaceutical houses have issued products bearing the personal endorsement signature of a physician. This was particularly flagrant in the case of an imported product. The Council therefore adopted the following amplification of rule 6:

The use of the personal signature of a physician, or the facsimile of such signature on the label or in advertising of products, is objectionable because it tends to create, through the implication of personal supervision, an exaggerated or misleading impression of therapeutic value, and articles so labeled or advertised are therefore not acceptable.

*Injection Solutions for Hernia*—The referee in charge of the consideration of injection treatment of hernia reported the results of a questionnaire that had been sent to certain hospitals and individuals. The referee reported that the evidence submitted to date is not conclusive.

The Council voted that the referee prepare a report on the present status of the injection treatment of hernia for submission to the Council with a view to ultimate publication.

*Hospital Practice for Interns*—It was decided to revise radically the book "Hospital Practice for Interns" during the summer of 1936.

*Status of Bismuth Preparations*—The referee in charge of bismuth preparations presented the following statement:

There are many different types of bismuth preparations that are used, and with all of them the object of the injection is so to raise and maintain the level of metallic bismuth in the blood stream that it will function as an active antisyphilitic agent. With the water soluble preparations this will require the injections being given every day or every other day or every third day. With the insoluble agents and with the oil soluble preparations, on the other hand, this level is gained and can probably be maintained by injections once a week or every five days at the least.

To any one it is at once evident that the number of bismuth salts possibly therapeutically useful that might be tried for treating syphilis is legion. Thus the article on bismuth in the Jadassohn Handbuch of 1928 already mentioned 112 different or allied preparations. When one considers the many and varied preparations of bismuth, one may realize the temptation presented to the manufacturer to introduce another "new" bismuth compound. It is much like the problem of the barbiturates. It is true that now and then the pharmacologist may evolve a new product along a new line and furnish something worth while.

On the other hand, the referee can see great confusion and little help to general practice if the manufacturers continue simply to turn out "another bismuth compound." It is believed the Council should go on record as discouraging such practices unless the product produced is actually a new approach to the problem offering actual selective action, a higher chemotherapeutic quotient, or some other outstanding advantage over products already on the market.

The Council voted that after July 1, 1936, the Council consider no new bismuth preparations unless they show some distinctive advantages over those already accepted.

*Labeling of Products Subject to Deterioration*—The Council had before it a preparation claimed to contain 4.05 per cent sodium hypochlorite when actually it was prepared with a



concentration of 4.50 per cent in order to allow for the deterioration during the year. The label in addition contains a statement that 12 per cent should be allowed for deterioration during the year.

The Council believed that the product should be labeled at whatever concentration it is proposed to make it at the time it is placed on the market and that on the label there be a supplemental statement of dating and rate of deterioration.

The Council adopted a motion that any products of this sort be labeled with a statement of the composition at the time it leaves the manufacturer, and is dated; furthermore, in case the product deteriorates or is subject to deterioration, that a supplemental statement be made as to the amount and/or rate of deterioration, either by indicating the percentage of deterioration per year or the actual minimum amount at the end of the year.

**Reports of Committees on Publications of the Council on Pharmacy and Chemistry.**—The Council considered the report of the Committee on Epitome of the Pharmacopoeia and National Formulary and the Committee on Useful Drugs. It was announced that the Epitome had been revised in accordance with the new edition of the Pharmacopoeia and the National Formulary and would be available approximately May 1.

New and Nonofficial Remedies has also been revised to bring it in accordance with the new official compendium. It should be available about the middle of June.

The manuscript for Useful Drugs has been sent to the printer and the book should be available in early summer.

## REPORTS OF THE COUNCIL

### Nomenclature of Endocrine Principles: I.

THE PRESENT UNSETTLED STATE OF ENDOCRINOLOGICAL NOMENCLATURE HAS BEEN THE CAUSE OF INCREASING CONFUSION IN RECENT YEARS. IN AN EFFORT TO REMEDY THIS DEPLORABLE SITUATION, THE COUNCIL SOLICITED THE COOPERATION OF A NUMBER OF EXPERTS WHO HAVE MADE FUNDAMENTAL CONTRIBUTIONS TO GLANDULAR PHYSIOLOGY. THIS GROUP, TERMED THE ADVISORY COMMITTEE ON THE NOMENCLATURE OF ENDOCRINE PRINCIPLES, IS COMPOSED OF THE FOLLOWING: DRs. EDGAR ALLEN, WILLARD M. ALLEN, J. B. COLLIP, G. W. CORNER, E. A. DOISI, E. T. ENGLE, H. M. EVANS, R. T. FRANK, F. L. HISAW, F. C. KOCH, LEO LOEB, G. F. MARRIAN, C. R. MOORE, OSCAR RIDDLE, P. E. SMITH AND G. W. TURNER; M. S. BISKIND, CORRESPONDING SECRETARY. ON THE RECOMMENDATION OF THIS COMMITTEE, THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. IT IS ANTICIPATED THAT OTHER REPORTS ON RELATED TOPICS WILL BE PUBLISHED IN THE NEAR FUTURE.

THE COUNCIL DESIRES TO EXPRESS ITS SINCERE APPRECIATION TO THE MEMBERS OF THE ADVISORY COMMITTEE FOR THEIR WILLING COOPERATION.

PAUL NICHOLAS LEECH, Secretary.

### THE NOMENCLATURE OF THE CORPUS LUTEUM HORMONE

1. The Advisory Committee on the Nomenclature of Endocrine Principles has considered the question of choosing an appropriate name for the one definitely established hormone of the corpus luteum. This hormone is defined and quantitatively estimated by its property of acting on the rabbit's uterus to produce histologic changes (progestational changes) resembling those observed during early pregnancy and pseudopregnancy.<sup>1</sup> It has been demonstrated and agreed that the chemical structure of this substance is represented by the formula given herewith, and that no other natural substance has as yet been found having the same physiologic properties.

2. Crude extracts containing the hormone were produced in 1928 by Hisaw, Meyer and Weichert<sup>2</sup> of the University of

Wisconsin, and in 1929 by Corner and W. M. Allen<sup>3</sup> of the University of Rochester. The quantitative test now in general use was published by Corner and Allen at this time. Subsequent steps of purification were made by W. M. Allen<sup>4</sup> (1930, 1932), by Fevold, Hisaw and Leonard<sup>5</sup> (1932) and by Allen and Meyer<sup>6</sup> (1933) and the preparation of the hormone in crystalline form was announced in 1934 by Butenandt, Westphal and Cobler<sup>7</sup> of Danzig, by Slotta, Ruschig and Blanke<sup>8</sup> of Breslau and by W. M. Allen and Wintersteiner<sup>9</sup> of Rochester and New York, respectively. Complete determination of the structural formula and the earliest method of artificial preparation were published by Butenandt<sup>7</sup> in 1934.

3. A long period elapsed between the demonstration by Ludwig Fraenkel<sup>10</sup> in 1903 and by Leo Loeb<sup>11</sup> in 1907 that the corpus luteum has an endocrine function and the preparation of active extracts. During this time crude preparations of the corpus luteum for oral use were in vogue and various names such as lutein were current, were made the basis of trade names, and crept into the medical dictionaries.

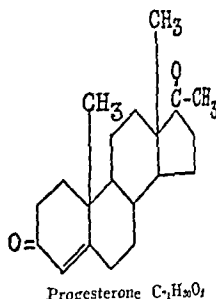
4. To indicate and emphasize the existence in the early crude extracts of an active substance having the property defined, the name *progestin*, coined by G. W. Corner, was introduced by W. M. Allen<sup>4</sup> in 1930. The name *corporin*, coined by F. L. Hisaw,<sup>5</sup> appears to have been used in print first in 1932.

**Progestin.** Etymology: *pro-*, prefix meaning in behalf of or favoring, *gestatio*, gestation; and *-in*. The word signifies a chemical substance useful in gestation. It is defined in the American Illustrated Medical Dictionary as "a hormone contained in the corpora lutea, whose function is to prepare the endometrium for the reception and development of the fertilized ovum." The word has been widely used in American scientific and clinical literature and in England. Spelled *progestine*, it has had moderate use in France. In Germany it has been little used.

**Corporin.** Etymology, from *corpus*, body, and *-in*, suffix indicating a chemical substance. The word therefore signifies a substance having to do with a body (i. e., the corpus luteum). It is defined in the American Illustrated Medical Dictionary as "same as *progestin*." The word has been used to some extent in the American literature but appears not to have been used in other countries.

5. Since the determination in 1934 of the chemical nature of the hormone, American writers have usually continued to refer to the pure substance by the name *progestin*. Slotta and his co-workers, however, introduced the word *luteosterone*.

**Luteosterone.** Etymology: from *luteum*, yellow, referring to the corpus luteum; *sterol*, name of a class of chemical substances, and the suffix *-one*, indicating that the particular substance is a ketone. The



3. Corner, G. W., and Allen, W. M.: Physiology of the Corpus Luteum. II. Production of a Special Uterine Reaction (Progestational Proliferation) by Extracts of the Corpus Luteum, *Am. J. Physiol.* 88: 326 (March) 1929.

4. Allen, W. M.: Physiology of the Corpus Luteum: V. The Preparation and Some Chemical Properties of Progestin, a Hormone of the Corpus Luteum Which Produces Progestational Proliferation, *Am. J. Physiol.* 92: 174 (Feb.) 1930; The Preparation of Purified Progestin, *J. Biol. Chem.* 98: 591 (Nov.) 1932.

5. Fevold, H. L., Hisaw, F. L., and Leonard, S. L.: Hormones of the Corpus Luteum. The Separation and Purification of Three Active Substances, *J. Am. Chem. Soc.* 54: 254 (Jan.) 1932. Fevold, H. L., and Hisaw, F. L.: Purification of Corporin, *Proc. Soc. Exper. Biol. & Med.* 29: 620 (Feb.) 1932.

6. Allen, W. M., and Meyer, R. K.: The Quantitative Separation of Progestin from Oestrin, *Extracts of the Corpus Luteum*, *Am. J. Physiol.* 106: 55 (Oct.) 1933.

7. Butenandt, Adolf; W., F., and Cobler, H.: Ueber einen Abbau des Stigmastensins in die Hormone, ein Stoff, ein Bei- trag zur Konstitution des "Progestins", *Monatsh. Chem. Phys.* 67: 1611, 1934. Westphal, U.: Ueber die Darstellung von Progestin aus Stigmastensin, die Kon- stitution des "Progestins", *Monatsh. Chem. Phys.* 67: 2085 (Dec.) 1934.

8. Slotta, E.: Reindarstellung der Konstitution von Luteosterone, *Monatsh. Chem. Phys.* 67: 1647, 1934.

9. Allen, W. M., and Wintersteiner, Oskar: Crystalline Progestin, *Science* 80: 190 (Aug. 24) 1934. Wintersteiner, Oskar, and Allen, W. M.: Crystalline Progestin, *J. Biol. Chem.* 107: 321 (Oct.) 1934.

10. Fraenkel Ludwig: Die Funktion des Corpus luteum, *Arch. f. Gynak.* 68: 438, 1903.

11. Loeb, Leo: Ueber die experimentelle Erzeugung von Knoten von Deciduae in dem Uterus des Meerschweinchens nach stattgefundener Copulation, *Zentralbl. f. allg. Path. u. path. Anat.* 18: 563 (Jul. 31) 1907. The Production of Deciduae and the Relation Between the Ovaries and the Formation of the Decidua, *J. A. M. A.* 50: 1897 (June 6) 1908. The Experimental Production of the Maternal Placenta and the Function of the Corpus Luteum, *ibid.* 53: 1471 (Oct. 30) 1909. Beitrage zur Analyse des Gewebewachstums, *Arch. f. Entwickl. med.* 27: 89 (Jan. 12) 1909, 31: 456 (Feb. 14) 1911, 32: 67 (May 16) 1911.

word signifies therefore the ketone of a sterol derived from the corpus luteum. Philologists unfamiliar with its history might, however, interpret it to mean simply a yellow ketosterol.

6 In the spring of 1934 the European biochemists who had so largely taken part in the solution of the chemical problems concerned pointed out that in their opinion the word progesterin is not sufficiently indicative of the exact chemical structure of the substance to be used conveniently in the literature of organic chemistry. It appears, moreover, to have been adopted as a manufacturer's name for certain partially purified commercial extracts, sold in Europe. After correspondence and personal conference, the following letter<sup>12</sup> was drawn up by Butenandt, and signed as noted herewith. Wintersteiner also gave assent to the document, although his name does not appear among the signers. The letter appeared in several scientific publications in England, Germany and the United States as indicated.

During the past year the progestational hormone has been isolated from the corpus luteum in pure form and its constitution established. Heretofore two different names have been used for this hormone in the literature (progesterin, luteosterone). For the sake of international uniformity we agree to use hereafter in the scientific literature only the name *progesterone* for the pure hormone. As is known, the pure hormone exists in two different forms, one melting at 128° (uncorr.) and the other at 121° (uncorr.). The higher melting form (Compound B of Wintersteiner and Allen [1934] and Compound C of Slotta, Ruschig and Fels [1934]) will be known as a progesterone and the lower melting compound (Compound C of Wintersteiner and Allen and Compound D of Slotta, Ruschig and Fels) as  $\beta$  progesterone. We hope that these names will be generally accepted in the scientific literature.

Breslau, Germany,  
Danzig Langfuhr,  
Rochester, N. Y.

W. M. ALLEN  
A. BUTENANDT  
G. W. CORNER  
K. H. SLOTTA

7 On the recommendation of the Advisory Committee, the Council adopted the following terms: (1) *progesterone* to indicate the chemically pure substance having the structure and properties named in paragraph 1, (2) *progestin* as a general term to indicate the substance (and other chemically allied substances having similar action, in case any such compounds are subsequently discovered) without reference to the state of chemical purity, for convenience in clinical and biologic speech and writing.

## NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

### SCARLET FEVER IMMUNITY TEST.—(See New and Nonofficial Remedies, 1935, p. 411)

United States Standard Products Company, Woodworth, Wis.

*Scarlet Fever Streptococcus Toxin for the Dick Test*—Prepared by the method of Drs. Dick, under U. S. patent 1,547,369 (July 28, 1925, expires 1942) by license of the Scarlet Fever Committee, Inc. Marketed in packages of one ampule containing sufficient toxin for ten tests, and in packages of one vial containing sufficient toxin for 100 tests.

### MERCURY SALICYLATE (See New and Nonofficial Remedies, 1935, p. 308)

The following dosage form has been accepted:

*Ampules Mercury Salicylate 1 grain (0.065 Gm.) Suspended in Oil 1 cc.* Each 1 cc. ampule contains mercury salicylate 1 grain (0.065 Gm.) quinine and urea hydrochloride 0.05 Gm. anhydrous wool fat 0.1 Gm., distilled water 0.05 cc. and Wesson oil (maize oil) to make 1 cc.

Prepared by the Cheplin Biological Laboratories Inc., Syracuse, N. Y.

### PROTARGOL (See New and Nonofficial Remedies, 1935, p. 416)

The following dosage form has been accepted:

*Granules Protargol Compound*—Protargol 33½ per cent, and urea, 66½ per cent. The urea is added because of its effect of increasing the solubility but is otherwise inert.

<sup>12</sup> Allen, W. M., Butenandt, Adolf, Corner, G. W., and Slotta, K. H. Nomenclature of Corpus Luteum Hormone, *Science* 82: 163 (Aug. 16) 1935, *Nature* 136: 303 (Aug. 24) 1935, *Zur Nomenklatur des Corpus Luteum Hormons*, *Helv. Chim. Acta* 18: 134, 1935, *Klin. Wochenschr.* 14: 1182 1935, *Ztschr. f. physiol. Chem.* 235: 1, 1935, *Ber. d. deutsch. chem. Gesellsch.* 68: 1746, 1935.

## Committee on Foods

### ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

FRANKLIN C. BING, Secretary

DURKEE'S BRAND OLEOMARGARINE  
DURKEE'S BO-KAY BRAND OLEOMARGARINE  
DINNER BELL BRAND OLEOMARGARINE  
MY OWN BRAND OLEOMARGARINE  
TASTI-BRAND OLEOMARGARINE  
TROCO BRAND OLEOMARGARINE

*Manufacturer*—Durkee Famous Foods, Inc., Chicago

*Description*—Oleomargarines prepared from refined coconut oil, pasteurized cultured milk, refined cottonseed oil, salt, mono-stearyl sodium sulfoacetate, and sodium benzoate (0.1 per cent).

*Manufacture*—Essentially the same as described for Durkee's Vegetable Oleomargarine (*THE JOURNAL*, Aug. 3, 1935, p. 369).

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	15.4
Ash (other than sodium chloride)	0.1
Sodium chloride	3.2
Fat (ether extract)	80.3
Protein (N × 6.25)	0.5
Lactose	0.6
Sodium benzoate	0.1
Glycerin derivative	0.4

*Calories*—7.3 per gram, 207 per ounce

*Claims of Manufacturer*—For use as a bread spread and in cooking, baking and frying.

### CELLU BRAND PEAS, WATER PACKED

*Distributor*—Chicago Dietetic Supply House, Inc., Chicago

*Packer*—Valders Canning Company, Valders, Wis.

*Description*—Canned peas, packed in water.

*Manufacture*—Selected peas are harvested at the desired degree of maturity, vined, washed, graded for size, inspected, blanched, again washed, and automatically filled into cans. The cans are filled with water, sealed and processed.

<i>Analysis</i> (submitted by distributor) —	per cent
Moisture	88.7
Total solids	11.3
Ash	0.4
Fat (ether extract)	0.2
Protein (N × 6.25)	3.1
Crude fiber	0.8
Starch (diastase method)	5.4
Carbohydrates other than crude fiber (by difference)	6.8

*Calories*—0.4 per gram, 11 per ounce

*Claims of Manufacturer*—Small, sifted, young, tender peas, packed without sugar or salt. For use in special diets in which sugar or salt is proscribed, or in quantitative diets of calculated composition.

### AVONDALE FARMS PASTEURIZED HOMOGENIZED MILK

*Distributor*—Avondale Farms, Knoxville, Tenn.

*Description*—Bottled, pasteurized, homogenized milk.

*Preparation*—Milk obtained from tuberculin tested herds under government and company inspection is pasteurized by the standard holding method (63 C. for thirty minutes), homogenized at 3,000 pounds pressure, cooled to 3 C. and automatically filled in bottles by the usual procedure (*THE JOURNAL*, Sept. 1, 1934, p. 681).

*Analysis*—Standardized to contain not less than 4.2 per cent of milk fat.

*Claims of Manufacturer*—The cream does not separate. The curd formed in the stomach is softer than that from unhomogenized milk.

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 23, 1936

## THE KANSAS CITY SESSION

The annual session of the American Medical Association, held in Kansas City last week, was extraordinarily successful from many different points of view. The attendance was well beyond that anticipated. The weather during the entire week was ideal. The new municipal auditorium is conveniently arranged, beautiful in its appointments, and impressive in its appearance. The physicians and the people of Kansas City provided a welcome and an intimate type of hospitality quite distinctive for an occasion of this character.

The House of Delegates was particularly concerned in this session, as will be seen from its proceedings, with the relationships of physicians to hospitals, with the new experiments that are being undertaken in changing the nature of medical practice, with the status of prevention of conception, and with raising still further the standards of medical education and medical ethics. Its sessions were harmonious; the Board of Trustees and executives of the Association received special commendation for their efficiency in the conduct of the affairs of the Association. These affairs are ever widening in their scope and in the extent of the service rendered to the medical profession.

The opening general meeting was unique in several ways. First, the President-Elect who was to have been installed was unfortunately so seriously ill as to be unable to attend the meeting. He was therefore, by special action of the House of Delegates, installed in absentia. The governors of two great states, Missouri and Kansas, attended in person and delivered messages of welcome. Governor Park of Missouri spoke, briefly welcoming the visiting physicians. The great arena of the auditorium was filled with some 12,000 to 14,000 listeners who stood unanimously in response to a thrilling announcement by Governor Alfred M. Landon indicating his opposition to regimentation of the medical profession. Governor Landon said in part:

From the earliest days the general practitioner in America was, first of all, an individualist. The circumstances of his work made him that; but it was a fortunate situation for the

people who needed medical care. It meant that they could have personal ministrations, that there was an intimate relationship between physician and patient and that the sufferer became at once, and remained, the object of very special attention.

Down to the present day American medicine has continued to be primarily individualistic. It is chiefly on that basis that it is to be distinguished from medicine in many foreign countries. I know very well the arguments for an extension of the best of medical service to all groups of the American people. It is a worthy cause. It is enlisting the attention of the best brains of your profession. I have confidence that you will work it out.

But medicine will not willingly be made the servile instrument of politicians or the instrument of domineering bureaucracy. I predict that the typical American physician and organized medicine as a whole will at no time be ready for any scheme of regimentation, for any system of impersonalized medicine which is totally alien to the best traditions of the American practitioner and of the profession as a whole.

The American practitioner will not be a party to destruction of that individual, personal service which has been the occasion of a special and justifiable pride. Whatever further advances are made in the broadening of medical service—and there will be an abundance of them—will be made, so far as he is concerned, in accordance with the fundamental conditions of previous achievements.

I want especially to approve the efforts for meeting its responsibilities of the Jackson County Medical Society as mentioned by its president. A nation that can maintain and even elevate its medical standards and the state of public health in the trying years of a prolonged depression needs to make no apology for the quality and the reach of its medical facilities.

That condition itself is a tribute to the American physician in his continued, unselfish devotion to a worthy task. May you long abide in your loyalty to the ideal of individual, personal ministrations.

The general scientific meetings attracted great audiences, particularly the lecture by Lord Horder on thyrotoxicosis and the motion picture exhibition by Dr. Joseph B. De Lee. The latter drew a capacity audience. The distinguished guests of the Association from abroad included not only Lord Horder but also Leon Ascher of Switzerland and Wolfgang Heubner of Berlin. The meetings of the various sections took place in beautiful and well appointed halls. Many physicians remarked on the utility and practical character of the contributions. As in previous years, the Scientific Exhibit produced a great number of demonstrations. The types of material exhibited were varied, and throngs of physicians assembled in the various booths in such numbers as to block the aisles completely on many occasions. The awards of medals and certificates of merit indicate the character of the scientific contributions.

A special feature of the Kansas City session which attracted attention was the efficient manner in which the local organization had bound the meeting closely into the lives of the public. Every service club, educational organization and forum in the city opened its doors to medical speakers. There were local and national broadcasts in profusion, indicating to the public the advances in medicine. Furthermore, the press, both local and national, surpassed all previous efforts in its coverage, the press representatives in attendance including not only some twenty-four reporters and photographers from the local newspapers but also three

representatives of the Associated Press, three from the United Press, one from the International News, one from Universal Service, one from Science Service, one from the North American Newspaper Alliance, one from the New York *Herald Tribune*, one from the New York *Times*, one from the Philadelphia *Inquirer*, one from the Chicago *Tribune*, and several representing other periodicals.

The Woman's Auxiliary registered a great attendance and held numerous sessions, both social and organizational. The social events included the special dinner for the House of Delegates and officers on Monday night, the opening general meeting Tuesday night, innumerable fraternity and alumni meetings on Wednesday, and the "Bring Your Husband Dinner" and annual reception and dance on Thursday night. All these events had capacity attendance. They were perfectly planned, exactly timed and conducted with a facility which indicated the experience of the Kansas City profession in the conduct of medical meetings. Indeed, the outstanding feature of the session was the manner in which the Kansas City medical profession *en masse* united in doing its utmost to make the session a success. The local committees were constantly in evidence, moving the affairs with precision and making the stranger feel at home within their gates. The departing physicians expressed almost universal satisfaction. Many already await an opportunity to return and to partake again of one of the most friendly and efficient receptions ever accorded to any great convention of the American Medical Association.



JOHN HOWELL JANEWAY UPHAM, M.D.  
PRESIDENT ELECT OF THE AMERICAN MEDICAL ASSOCIATION

#### SMALLPOX IN THE UNITED STATES

According to reports from twenty-six countries to the League of Nations from 1921 to 1930, the United States showed the second highest reported attack rate of smallpox. This is a striking and, at first thought, a wholly unexpected observation. The statement by itself is somewhat misleading, as brought out in a study of the incidence and fatality of this disease.<sup>1</sup> The apparent

high incidence in this country is due in part to a better system of reporting cases in the United States than in other countries and in part to the fact that the strain of smallpox endemic in this country is of a mild variety which is difficult to control because of the lack of general interest in prophylactic treatment. As might be expected, in countries in which the malignant form predominates, the stimulus to secure general protection by vaccination is greater and hence the control of the disease is more effectively accomplished. Although the incidence of smallpox in this country is high, the fatality rate in comparison with that of most other countries is exceedingly low. Nevertheless, the high attack rate indicates the need of a critical appraisal of the situation and the formulation of plans for more adequate control.

The comparatively high incidence of smallpox in this country, according to the survey referred to, is due primarily to the relatively low endemic vaccination rate. The mild type of the disease is thus permitted to maintain itself. This explanation obviously suggests a procedure for the control of the condition; namely, a general increase in vaccination against smallpox. Experience has demonstrated that vaccination is exceedingly effective. As is shown in the League of Nations review, the well vaccinated countries have low attack rates, whereas the opposite is true in poorly vaccinated countries. Apparent exceptions to this rule are found in the cases of Australia

and New Zealand. However, the low incidence of smallpox in these countries can be explained by their geographic isolation and constant vigilance at the ports of entry to prevent the introduction of the disease from other countries. The apparent efficacy of this measure suggests that the procedure should be more vigorously practiced in this country. Careful investigations here have shown that epidemics of the malignant form of smallpox have been started in many instances by infected immigrants, particularly by smuggled labor from Mexico and other countries. Also the vagrant, migratory laborer and people from unvaccinated rural regions have been influential in the spread of smallpox within the boundaries of our own country. An excellent example of this is seen in the increased incidence

1. Hedrich, A. W.: Changes in the Incidence and Fatality of Small pox in Recent Decades, *Pub Health Rep* 51:363 (April) 1936

of smallpox during times of prosperity when there is an intensified migration to industrial centers from rural districts. The opposite tendency may account in some measure for the decline of smallpox during the recent economic depression.

The foregoing facts unquestionably indicate the need for a more widespread vaccination against smallpox in this country and for greater vigilance not only to minimize the spread of the disease from section to section but particularly to prevent the entrance of the malignant form from foreign countries.

### THE EVOLUTION OF DISEASES

The life history of a disease is often like that of a human being. Its weak or lusty infancy is at first greeted with mild speculation. As it gradually grows it develops the proportions of a young adult and abundant vigor. Finally, after varying periods of strength, the old age and decline of a disease may begin to occur. In some instances it finally disappears. Riesman<sup>1</sup> has recently discussed a number of the dead or dying diseases. Among those which are no longer mentioned is the so-called sweating sickness, which apparently first appeared in England after the battle of Bosworth in 1485. It caused a short rigor followed by severe perspiration, headache, stupor and epigastric pains. The whole body was bathed with fetid perspiration. The crisis was over within the short space of forty-eight hours. Scarcely one in a hundred escaped. Several epidemics of this strange disease seem to have swept over England in the reign of Henry VIII. It apparently did not spread to Scotland, Ireland or Calais, but Hamburg was visited by the sweating sickness in 1529. Within twenty-two days, 1,100 inhabitants of Hamburg died.

Another disease which is now not recognized, at least by the same name, is the petechial fever of Italy. It was described by Fracastoro as the first plague of the kind to occur in that country. Those who were affected with this condition "lay upon their backs with an oppressed brain, blunted senses, delirious, with blood-shot eyes." Between the fourth and the seventh day of this illness, purple spots like flea bites or larger broke out. It was not especially contagious and did not seem to be carried by fomites. Tarantism was another curious disease of the Middle Ages which is now apparently nonexistent. It was believed by many to result from the bite of a spider. A few hours after the bite "the patient is seized with great difficulty of breathing, a heavy anguish of heart, a prodigious sadness, his voice is sorrowful and querulous, his eyes disturbed." Often after the violent symptoms were over the patients were affected with a peculiar kind of melancholy, which continued until "by dancing or singing or change of air those violent impressions are quite extricated from the blood and the fluid of the nerves." What this strange

condition was no one even today seems quite certain. It has been suggested by Professor Sigerist, however, that tarantism was a revival of the Dionysiac cult of Magna Graecia.

The dancing mania, which also broke out in various regions throughout the Middle Ages, is now no longer common. Sometimes St. Vitus' dance or chorea was probably at the root of the term; much more often mass hysteria was probably responsible; sometimes it may have been due to diseases that find no counterpart today.

Many other diseases which a few centuries ago must be considered to have been in their prime are still present today but in attenuated form, lacking much of the highly fatal and spreading qualities which they once possessed. The decline in these diseases is probably due to several factors, including improved sanitation and medical knowledge, but also probably to the natural life history of the disease. The bubonic plague, which spread over Europe as the black death on many occasions, has not for some centuries reached such serious proportions in civilized countries. Defoe's *Journal of the Plague Year*, the literary as well as the medical qualities of which recommend it to all medical men, illustrates only too well the severity which a disease can take in its prime. It is possible, furthermore, that the plague may yet show sufficient life to invade civilized communities once more in epidemic proportions. Leprosy, which in the Middle Ages was one of the most dread diseases, has in most countries become a relative rarity. It will probably never again terrify the world as it has in the past. Chlorosis, on which Fowler<sup>2</sup> has recently written an obituary, is no longer the common disease it used to be. With present knowledge of etiologic factors in chlorosis, it is especially interesting to read of the old ideas that this condition was due to love sickness. Ergotism, or St. Anthony's fire, which was due to the eating of bread made from diseased grain, is now almost extinct.

In relatively recent years there has been definite evidence of a decline in frequency of a large group of other diseases. Typhoid, tuberculosis, diphtheria and probably syphilis are less frequent or less generally virulent than some one or two hundred years ago. Part of this change must be assigned to sanitary measures and improved treatment, but part, especially for syphilis and probably diphtheria, may be due to increased race resistance and natural decline of virulence, which might be expected after vigorous flourishing for several centuries.

Among the new diseases, at least from the standpoint of their definite recognition, are psittacosis, tularemia and spirochetal jaundice. It is yet impossible to say whether these and like diseases will die in infancy or attain full growth with wide invasion. It is perhaps possible to say that, of these, spirochetal jaundice is the most likely to become widespread.

1. Riesman, David: Deceased Diseases, *Ann. Med. Hist.* 8: 160 (March) 1936.

2. Fowler, W. M.: Chlorosis—An Obituary, *Ann. Med. Hist.* 8: 168 (March) 1936.

## Current Comment

### JOHN HOWELL JANEWAY UPHAM, PRESIDENT-ELECT

When Dr. John Howell Janeway Upham was elevated to the position of President-Elect of the American Medical Association by the House of Delegates at the session in Kansas City, it recognized a career of distinguished service in organized medicine marked by devotion and success. The President-Elect was born at Trenton, N. J., Aug. 12, 1871. After his preliminary education he attended the University of Pennsylvania, where he received the certificate of biology in 1891.

His medical degree was awarded in 1894 in a class which has contributed other notable members to high places in the American Medical Association. Following an internship at the Johns Hopkins Hospital in Baltimore from 1894 to 1896, Dr. Upham took up the practice of medicine at Columbus, Ohio. He married Alice Lee of that city in June 1897. He served as instructor of medicine at Starling Medical College from 1897 to 1902 and during that time took post-graduate work at Prague, Leipzig and Berlin. From 1902 to 1908 he was associate professor of medicine in Starling (Ohio) Medical College and then became professor of medicine and clinical medicine. This position he held until 1914, when he was appointed professor of medicine at Ohio State University College of Medicine. Since 1927 he has been dean of the medical school of Ohio State University. In civic affairs he has occupied the position of member of the Ohio State Medical Board since 1913. In 1922 he was on the Advisory Committee of the American Red Cross. In the Ohio State Medical Association he served as secretary-editor from 1907 to 1913, president in 1914-1915, and since that time has been chairman of the Legislative Committee. In the American Medical Association Dr. Upham served on the Judicial Council for a term beginning in 1922, and he was for twelve years a member of the Board of Trustees, becoming chairman of the Board in 1933. In all the affairs of the Association in which he has taken such a prominent part he has made an efficient contribution, giving freely of his time and his ability. No

election to the highest office in the gift of the Association could be more fitting than this recognition of John H. J. Upham.

### J. TATE MASON AND THE VICE PRESIDENT, CHARLES GORDON HEYD

Over the success, the brilliance and the happiness of the Kansas City session lay the dark shadow of the serious illness of the President-Elect—now installed as President of the American Medical Association—Dr. James Tate Mason of Seattle. Culminating a year in which he traveled widely and spoke much on behalf of organized medicine, he became ill with a severe involvement of his circulatory system, resulting eventu-

ally in multiple emboli which occluded blood vessels in the legs and also in the brain. At the time of this writing he has already suffered gangrene of the left extremity requiring its removal, complete paralysis of the left side and a gradually advancing gangrene of the right leg and thigh. Notwithstanding this terrible illness as well as deaths among members of his family, he sent encouraging messages to the House of Delegates which will be found in its proceedings, and he telegraphed his personal appointments to fill vacancies in the councils of the Association. In view of the serious character of his illness and the certainty that the Vice President under the By-Laws of the Association will be compelled to officiate in the place of the President during most of the term, the choice of a Vice President was especially significant. For this position the House of Dele-



CHARLES GORDON HEYD, M.D.  
VICE PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION

gates chose Charles Gordon Heyd of New York, at present professor of surgery in the Post-Graduate Medical School and Hospital of Columbia University, consultant surgeon at the Women's Hospital and trustee of the Medical Society of the County of New York, and a distinguished contributor to the literature of surgery. Dr. Heyd has been president of the New York State Medical Society and as chairman in charge of arrangements for the last annual session of that association revealed an executive capacity extraordinary among practicing physicians. By his election the Association is assured a distinguished leader, a forceful speaker, and a genial physician to serve in the place of its President when the emergency arises.

# PROCEEDINGS OF THE KANSAS CITY SESSION

MINUTES OF THE EIGHTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT KANSAS CITY, MAY 11-15, 1936

## HOUSE OF DELEGATES

### *First Meeting—Monday Morning, May 11*

The House of Delegates convened in the Ballroom of the Hotel Muehlebach and was called to order at 10 a. m. by the Speaker, Dr. N. B. Van Etten.

#### **Preliminary Report of the Reference Committee on Credentials**

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. D. Brook, Michigan, who reported that 153 delegates with proper credentials had registered. There being no regularly elected alternate from Illinois able to attend, Dr. Brook recommended the seating of Dr. Harold M. Camp, Illinois, in place of Dr. C. E. Wilkinson, who was not in attendance.

On motion of Dr. Brook, seconded by Dr. John Z. Brown Sr., Utah, and carried, the report of the Reference Committee on Credentials was adopted.

The Speaker declared that the roll call would be dispensed with and that the signed attendance slips would constitute the roll of the House for the morning.

#### **Adoption of Minutes of Atlantic City Session**

It was moved by Dr. McLain Rogers, Oklahoma, seconded by Dr. H. B. Everett, Tennessee, and carried, that minutes of the Atlantic City session be adopted as printed.

#### **Address of the Speaker, Dr. N. B. Van Etten**

The Vice Speaker, Dr. H. H. Shoulders, Tennessee, presided while the Speaker, Dr. N. B. Van Etten, read his address, which was referred to the Reference Committee on Reports of Officers:

#### *Members of the House of Delegates:*

You have been selected by your state societies to carry to this body the opinions of your constituents, the opinions of your county medical societies, the opinions of your individual members. As selected representatives you will fail in your duty if you sit silently because of diffidence or disinterest. Members who are here for the first time may fear to express themselves because they are unfamiliar with our procedure. May I assure them that they will not fail of recognition or of opportunity so long as they discuss the problems which are before the House and remain within reasonable parliamentary bounds. You are the policy makers of this democratic organization, and not only does the country look to you for constructive action which shall reflect the progressive sentiment of American medicine, but your constituents in turn look to you for an interpretation of the quality of that sentiment. It is not the function of your Speaker to recommend action of any kind, but it is within his privilege to urge you to exercise all of your constitutional privileges and to function as fully as your ability permits. *Laissez faire* is a worn out phrase but it is still stupidly employed by far too many physicians. This is not a specific criticism of this body only, but a legitimate criticism of a very large body of our citizenship. It is lamentable that the physicians of the United States, who constitute the most highly educated professional group of any country, fail so miserably in the exercise of citizenship. James Bryce listed as hindrances to citizenship "indolence, private self interest, and party spirit." Inflexible party spirit, which sees no virtue in those who have other affiliations, is essentially obstructive. Private self interest, which denies any generous inquiry into the reasonableness of

other people's thinking, shuts the door in the face of progress. Indolence, disinterest, disinclination to help oneself, and avoidance of responsibility, failure to support those who are striving for the common good, are a hindrance to citizenship. Membership in the medical profession does not excuse any failure to function in the social or community life of the nation.

Every physician should employ all his abilities in the promotion of the public health. Every physician is politically potential. Every physician will find responsive hearing in every home which he visits if he will take the trouble to educate himself sufficiently to be able to discuss intelligently matters of local or national polity which concern the health of the community. He must acquire much more than a superficial knowledge of political machinery and must take his place therein. Dignified aloofness is stupidity dictated by laziness. The medical citizen of this type deserves nothing from our people and his profession will sink into economic slavery if he is allowed to direct it. Your Speaker would like to hope that this House of Delegates may be so stimulated by lively discussion that awakening messages may be carried home to all the physicians of this country. Your Speaker desires that every question shall be thoroughly debated in order that a reliable consensus may emerge. You will recall a recent special session of the House at which a unanimous action was taken. Although the Speaker, on that occasion, gave every possible freedom and latitude for personal expression, it seems evident that divergent sentiment which existed at that time, in that House, failed to be expressed. Ill advised or malicious critics frequently accuse the American Medical Association of failure to represent American medicine. These critics claim that a small group of officers is responsible for originating and propagandizing reactionary and obstructive policies. If the Association is not progressive, or sympathetically meeting social currents, the responsibility rests on the House of Delegates. You are responsible to American medicine and to the country for everything that is done by the administration. If your officers fail to carry out your mandates you may choose others, but your responsibility is fundamental. More than any other group, you are American medicine. The questions brought before you should be considered with the unequivocal thought that you are writing important social history. You have listened to much voting, the ayes are usually vibrant, but the noes attract more attention from those who are trying to think.

Unanimity is often colorless and uninspiring and is often viewed with suspicion of some undefined compulsion. For three thousand years since Icarus and his wings fell into the sea, man has persistently tried to fly and has finally conquered the air. For two thousand years physicians have faithfully kept the hippocratic oath and through its influence have continually polished their shining armor. They have climbed the hills and descended into the shadows and have climbed the hills again, always trying to press onward toward the prize of their high calling, which is the conquest of disease. There are elements in this country which are working for a totalitarian state. There are others who would preserve the essential values of individualism. There are those who would promote a social system in which government would dominate all professional and educational effort. It is not easy to see clearly through so many obscurant influences but we must make serious efforts in this House to think courageously and independently toward whatever is best for American medicine and for the American people.

After you have presented your resolutions you will not have discharged your duty until you have followed them to the reference committee and discussed them there so thoroughly



that you will be able to report to those whom you represent that the resultant action of this House represents the real opinion of this representative body. All reference committee rooms are open, and all delegates are welcome and free to discuss any question that may be assigned to a committee. Reference committees are requested to assemble as promptly as possible and to make every effort to be ready at the earliest possible moment to present their reports. Recesses, while the House waits, wastes time, involves hasty decisions, impairs efficiency and limits the opportunities of the delegates to visit concurrent scientific sessions. Expedition without sacrifice of free discussion should be our desired ideal.

Executive sessions may be of unusual significance. This year because of delicate questions which should be discussed within closed doors—in order perhaps to develop new policies—your Speaker requests that resolutions involving the relationships of physicians to hospitals, or other delicate questions, be either introduced by title and referred to the Reference Committee on Executive Session without reading or be introduced only in Executive Session on Tuesday afternoon.

The Reference Committee on Rules and Order of Business is requested to take this suggestion under early advisement and report as soon as possible.

Since our last session, at Atlantic City, in June 1935, we have lost many former officers of the Association and many former members of the House of Delegates. The dates following their names indicate the years of service:

- Bundy Allen, Tampa, Fla., 1930-1932; 1935 Special Session; 1935.
- James H. Bell, San Antonio, Texas (second vice president, 1904).
- Thomas C. Chalmers, Forest Hills, N. Y., 1919-1930.
- Henry B. Costill, Trenton, N. J., 1919; 1925; 1927
- M. H. Davis, Mays Lick, Ky., 1929.
- C. St. Clair Drake, Chicago, 1920.
- Edward B. Heckel, Pittsburgh, 1906-1907; 1917-1920; 1922; 1924 (Trustee 1924-1932).
- H. M. Johnson, Dawson, Minn., 1926-1927; 1929-1934; 1935 Special Session.
- E. Starr Judd, Rochester, Minn., (second vice president, 1918-1919; member of the Council on Scientific Assembly, 1915-1927; President-Elect 1930-1931; President, 1931-1932).
- John W. Keefe, Providence, R. I., 1914.
- Charles F. Kuhn, Detroit, 1917.
- Frederick Epplen, Seattle, 1923-1924; 1928-1929.
- James W. Gray, Clarksdale, Miss., 1916.
- H. R. Lathrop, Casper, Wyo., 1911; 1919; 1920.
- G. Milton Linthicum, Baltimore, 1935 Special Session.
- J. G. R. Manwaring, Flint, Mich., 1930.
- Charles L. Mix, Chicago, 1906-1907.
- Emmett P. North, St. Louis, 1923-1934; 1935 Special Session; 1935 (member of Council on Medical Education and Hospitals, 1927-1934; member of Judicial Council, 1934-1936).
- Levi H. Pelton, Waupaca, Wis., 1908.
- T. E. Ross Sr., Hattiesburg, Miss., 1928.
- Edwin P. Sloan, Bloomington, Ill., 1924-1932 (member of Judicial Council, 1932-1935).
- Morgan Smith, Little Rock, Ark., 1912-1914.
- H. R. Varney, Detroit, 1907.
- Willis F. Westmoreland, Atlanta, Ga. (fourth vice president, 1896).
- William H. Wilder, Chicago, 1926-1928; 1930-1931.

These, our friends, have passed beyond our vision, but they will continue to live in our memory.

Time, like an ever rolling stream,  
Bears all its sons away;  
They fly forgotten, as a dream  
Dies at the opening day.  
Our God our help in ages past,  
Our hope for years to come  
Be thou our guard while life shall last,  
And our eternal home.

At the request of the Vice Speaker, the members of the House rose and stood for one minute in silent tribute to the memory of departed delegates.

Reference Committees

The Speaker presented the following names of members of Reference Committees:

SECTIONS AND SECTION WORK

- Arthur J. Bedell, Chairman.....New York
- J. F. Bassig.....Kansas
- C. W. Roberts.....Georgia
- Clyde L. Cummer.....Section on Dermatology and Syphilology
- Tom B. Throckmorton.....Section on Nervous and Mental Diseases

RULES AND ORDER OF BUSINESS

- W. H. Seemann, Chairman.....Louisiana
- E. J. Best.....California
- J. H. Fitzgibbon.....Oregon
- I. C. Flippin.....Virginia
- C. W. Waggoner.....Ohio

MEDICAL EDUCATION

- George Blumer, Chairman.....Connecticut
- C. A. Dukes.....California
- Ben R. McClellan.....Ohio
- Joseph F. Siler.....United States Army
- J. Gurney Taylor.....Wisconsin

LEGISLATION AND PUBLIC RELATIONS

- R. L. Sensenich, Chairman.....Indiana
- A. C. Morgan.....Pennsylvania
- E. N. Roberts.....Idaho
- I. H. Irwin.....Montana
- C. J. Whalen.....Illinois

HYGIENE AND PUBLIC HEALTH

- Warren F. Draper, Chairman.....United States Public Health Service
- J. Newton Hunsberger.....Pennsylvania
- F. J. Underwood.....Mississippi
- Guy W. Wells.....Rhode Island
- Henry C. Macatee.....District of Columbia

AMENDMENTS TO CONSTITUTION AND BY-LAWS

- John W. Amesse, Chairman.....Colorado
- John F. Hagerty.....New Jersey
- S. P. Mengel.....Pennsylvania
- Wells Teachnor Sr.....Ohio
- Charles S. Skaggs.....Illinois

REPORTS OF OFFICERS

- Edward H. Cary, Chairman.....Texas
- William R. Brooksher.....Arkansas
- William A. Ellingwood.....Maine
- Edgar A. Hines.....South Carolina
- Edward R. Cunniffe.....New York

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

- Frederic E. Sondern, Chairman.....New York
- W. F. Braasch.....Minnesota
- E. F. Cody.....Massachusetts
- J. H. O'Shea.....Washington
- Walter E. Vest.....West Virginia

CREDENTIALS

- J. D. Brook, Chairman.....Michigan
- B. F. Bailey.....Nebraska
- F. L. Beck.....Wyoming
- J. R. McVay.....Missouri
- Deering G. Smith.....New Hampshire

MISCELLANEOUS BUSINESS

- H. A. Luce, Chairman.....Michigan
- A. J. Scott.....California
- H. B. Everett.....Tennessee
- G. Henry Mundt.....Illinois
- Harvey B. Stone.....Maryland

SPECIAL COMMITTEE ON EXECUTIVE SESSION

The Speaker asked for the consent of the House of Delegates to appoint a Reference Committee on Executive Session, which request was granted, on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. W. H. Seemann, Louisiana, and carried. The Speaker then appointed the following committee:

- C. E. Mongan, Chairman.....Massachusetts
- W. Albert Cook.....Oklahoma
- Wingate M. Johnson.....North Carolina
- Brien T. King.....Washington
- Floyd S. Winslow.....New York

SERGEANTS AT ARMS

- Holman Taylor.....Texas
- Howard C. Frontz.....Pennsylvania

Address of President James S. McLester

The Speaker resumed the Chair and presented the President, Dr. James S. McLester, Birmingham, Ala., who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

*Mr. Speaker and Members of the House of Delegates:*

In addressing this representative body of medical men I feel that it is appropriate to tell you that after completing a year of service as your President I have come to entertain a very high opinion, vastly higher than ever before, of the American physician. I am thinking not only of his scientific attainments and professional usefulness but also of his splendid traits of character and his fine qualities of heart. It has been a great privilege to know him as I have been permitted to know him during the past year. I have been deeply impressed, too, by the solidarity of the medical profession and the loyalty of its members to the American Medical Association. No other

national body has the cohesiveness and the whole hearted support of its constituents such as is enjoyed by this great Association. This is a cause for congratulation and also a challenge. Leadership, such as is unquestionably yours, carries great responsibility.

This Association can look back on a year of successful accomplishment. The scientific assembly at the Atlantic City meeting in which our great neighbor, the Canadian Medical Association, participated, represented the most notable gathering of medical men that has ever taken place on this or any other continent. The scientific exhibit was splendid; the excellence of the contributions, the ease of their arrangement, and their educational value, surpass all previous exhibits. THE JOURNAL throughout the year has been developed still further in usefulness, and the several councils and bureaus, working in the interest of the American people, have extended their influence over constantly wider areas. It has been a notable year.

All of this the House of Delegates can contemplate with satisfaction, for on this House rests in the last analysis the responsibility for the success or failure of this Association and, therefore, a direct responsibility for the welfare of the American physician. Seldom, however, is it possible for a man, while regarding his past accomplishments with satisfaction, to feel that he can rest on these achievements and exert himself no further. So it is with the American Medical Association. Your very success opens up new vistas and points the way to new endeavors. It reveals the possibilities that lie ahead and stimulates you and your officers to still greater effort. It is this work that lies ahead of which I should like to speak.

The thing which above all others interests medical men in America today is the preservation, unimpaired, of established methods of practice, methods by which American medicine has reached its present preeminent position. I am conscious of the fact that every address delivered to you during the past three years has dealt with this subject, often exclusively, and realize that the time has perhaps come to discuss other things. There is, however, something yet to be said and with your indulgence I should like briefly to continue this discussion in order to say a word not only of congratulation but also of stimulation.

There have been times during the past two years when it appeared that disaster was just ahead, when government, in its effort to extend social reform, appeared ready to reach out for control of medical practice, and those who are familiar with the results of such governmental control in other countries contemplated this step with grave misgivings. But the leadership exercised by you over a united medical profession and its influence on public opinion were wise and effective and no such change was accomplished. I think it can be said that the American Medical Association has successfully and usefully challenged the attempts of social scientists, who, without recognition of the medical and scientific considerations involved, would revolutionize the organization of medical care on a social and economic basis. The professional independence of the American physician has been preserved.

Can we afford to rest here? Any one who reads history will say no. In Germany during the last half of the previous century there came first many social reforms, agrarian, industrial, maternal welfare, old age pensions and unemployment insurance, and then finally, in the effort to quiet the continued unrest of the people, and as a panacea for many social ills, Bismarck brought about drastic changes in medical practice. This led to the present deplorable *kranken-kassen* system. A somewhat similar train of events, the result perhaps of different motives, followed in the Scandinavian countries and in France. Then, finally, in England, in the wake of other reforms, came Lloyd George's introduction of the panel system. Always, wherever government has reached out for control of the practice of medicine, it has been at the end of a long series of other so-called social reforms, and such control once established has never been relaxed.

Will history repeat itself in the United States of America? The train of events that I have attempted to describe as having taken place in European countries is already well started in this country, as can be seen in the maternal welfare, old age

pension and other provisions of the social security act recently enacted by Congress. Will the politicians of the near future, anxious to carry governmental subsidies still further, extend their control, as politicians have already done elsewhere, to medical care? Certainly, if I read history aright, the attempt will be made, and repeatedly. Whether it will succeed depends in large measure on the attitude of the medical men of America. There is only one voice that speaks authoritatively for the physicians of America, and that is the American Medical Association. What should be its attitude?

The attitude of the American Medical Association, as in the past, should be one of close attention to the medical needs of the American people and of alert preparedness to meet these needs. We have been sound, eminently sound, in our position that any form of governmental control of the practice of medicine would be fatal to medical progress and that the real sufferers in the end would be the American people. But our soundness on this point should not lead us to deny that there are still many problems, and that the solution of these, so far as the provision of medical care is concerned, will certainly call for intelligent and constructive thought on the part of the men that provide the medical care in the various communities of the country. The fermenting of the public consciousness of evolutionary progress as it relates to medical care will continue. From time to time there will come proposals for action, many of them ill advised, a few of them meritorious. These proposals will come from one (or more) of three sources: (a) from the public, including social scientists, economists and self-appointed reformers; (b) from legislatures, susceptible only too often to demagogic initiative and influence, and (c) from the medical men of the country speaking through their authoritative organization, the American Medical Association. If proposals of merit are to be made, which of these shall be the first to make them? For you and me there can be but one answer. I know that you will agree with me, however, when I remind you that such proposals should never be hastily made. They should be the result of long and deliberate thought and should be adopted only after painstaking investigation.

May I take this occasion, then, respectfully to point out a few instances in which this alertness to the needs of evolutionary progress is either being satisfactorily exhibited or is in need of further stimulation?

1. The appointment two years ago by the Council on Medical Education and Hospitals of a "blue-print committee," whose duty it is to study the medical needs of the future and to suggest for your consideration such revisions of medical education as seem advisable, was a wise, far seeing step. One of the most important among its many problems, I am tempted to say the most important, relates to the admission of medical students. The future of American medicine and the place which the medical profession will occupy in the social structure, whether one of dignified independence or of subordinate subservience, will depend in no small measure, I am convinced, on the type of man who is admitted to the study of medicine. Greater care than ever before is being exercised to devise standards and to select from the enormous number of applicants those men who, broadly considered, are best calculated to measure up to their opportunities. This committee has other difficult problems but it is proceeding with care and deliberation toward their solution. The group includes educators and other physicians of a wide range of professional interest; they are men of judgment and vision and from them can be expected advice that will go a long way toward settling some of the problems with which we are now confronted.

2. The work of the Council on Medical Education and Hospitals and of the Associated Certifying Boards in organizing, under the direction of this House, the several examining boards and in perfecting the machinery for the certification of specialists is a highly meritorious step and one that meets a rather insistent demand on the part of the public. Such certification involves many difficulties and must proceed with deliberation, but it should go forward as rapidly as possible and every effort should be made in the future to insure the effectiveness of this work.

3. To what extent do the hospital insurance schemes now being experimented with in different communities involve imposi-

tion on the attending physician and in other ways do violence to accepted professional standards? Are they adequate for the needs they are supposed to meet? These and similar questions are receiving the attention of the Bureau of Medical Economics. Soon they must be answered authoritatively.

4. Has the time come for a certain amount of standardization throughout the country in the relationship which the medical profession bears to certain governmental agencies, relationships which vary markedly in different communities? And is such standardization advisable? What is the proper relation, for instance, in a given county or community between the established associations of medical men and the public health authorities? In what form can still more effective cooperation between these two groups be worked out? I hope I shall be pardoned for pointing with pride to my own state, where the state medical association is by organic law the state board of health and appoints its own committees and officers. It seems to me that, as soon as we are prepared, steps toward such standardization as is possible could well be taken.

5. Many medical men feel that the care of the indigent must necessarily become in greater degree a charge on local tax funds. Physicians certainly are not weary of helping the unfortunate and of giving their services gratis, but there is a growing feeling that the problem has become too large for that kind of solution. If, then, the care of the indigent is to be recognized as in greater degree a governmental responsibility, what relation is to be worked out between medical men and governmental authorities, in order that purely medical considerations shall remain in the hands of the medical men and not of lay authorities? And who is to certify indigence? The problem has been worked out satisfactorily, I am told, in some communities. How can the principles used there be applied and worked out elsewhere? In this question alone there are a dozen sharp problems.

6. The Bureau of Health and Public Instruction of the Association is doing a meritorious piece of work and is going about it in the right way. Can this work be extended yet further and the public educated to a still better conception of health and the ways of guarding it? What further can be done to correct the public's tendency to depend on drug store prescriptions and "patent medicines" and to call in the doctor only when other sources have failed? What further, if anything, can be done about radio advertising of nostrums and proprietary medicines, which so clearly develop a tendency on the part of the public to deal with grave conditions without benefit of science and without either competent diagnosis or counsel? What can be done in further restriction of quacks and incompetents?

These problems are not comprehensive. Some of them may not be problems at all. But I present them to you as examples of the type of problem with which, in the evolutionary progress of our profession, we must continue to grapple. If they demand solution, we, not demagogues or social reformers, must solve them. Nor are these questions presented for immediate solution. A careful analysis of all factors concerned and profound thinking will be required for the ultimate answer.

And now may I speak of what is uppermost in the minds of all of us, of the great distress that we feel, you and I, over the illness of our friend and President-Elect, Tate Mason. During our brief period of service together as officers in the Association I have come to feel a deep affection for him and to entertain a high regard for his professional ability. Together he and I made a visit last winter to certain Eastern cities, where we discussed the work of the Association and endeavored to interpret your policies. Our object was to tell the members of the profession of the far reaching influence for good of this great Association and to convince them of the wisdom of the policies adopted by you. If there had been the least doubt in my own mind, Tate Mason would have convinced me. Those of you who heard him were, I am sure, proud that he represented you. Tate Mason is built of fine stuff. His qualities of heart and mind endear him to all men who know him. His illness is a great sorrow to all of us and I know that you join me in wishing him an early recovery.

### Message from President-Elect

Dr. Brien T. King, Washington, read the following message from Dr. J. Tate Mason, President-Elect of the American Medical Association, who was prevented from being in attendance because of illness, which was referred to the Reference Committee on Reports of Officers:

*Mr. Chairman and Delegates of the American Medical Association:*

Within the past year I have had the pleasure of speaking before approximately 8,000 physicians, not including the American Pharmaceutical Association and the physicians of British Columbia. These addresses were given in eighteen different states, and, while some of them were on scientific subjects, I found that the vast majority of the men of the profession were interested in the economic situation and that this subject was always brought in and discussed before the meetings adjourned.

I was surprised to find how little the average American physician knows about the work that is being carried on at the headquarters of the American Medical Association. To enable these physicians to understand and appreciate the many activities of the national association, with which you of the House of Delegates are so well acquainted, I suggested to the secretaries of the state societies and the editors of the state journals, at their meeting in Chicago last November, that each state should send at its own expense a representative to Chicago for a week each year, to study and acquaint himself with the activities of the Association so that he might bring an idea of these home to the men of his state. I suggested that this physician should not be a secretary or other officer of the state association or the editor of the journal, but some man who could impart this knowledge to the men of his state, and that this should be his sole duty.

In this rather brief address to the House of Delegates, I should like to impart to you the impression that I received from hundreds of these physicians to whom I was able to talk in practically all parts of America. It goes without saying that they did not all think alike. There were many fantastic and weird suggestions, but on the whole the physicians can be divided into three groups with respect to their ideas on medical economics. The first two groups together form a distinct minority, and the last and largest group stands out far in the majority throughout the country except in a few places on the Pacific and the Atlantic coasts.

Group A included a number of men who felt that the American Medical Association needed more leadership, that the House of Delegates should have met again last February, and that very definite proposals should be made for the future of organized medicine. They felt that a great deal of money should be spent for publicity, radio, newspapers, and so on. Some of these men felt that the House of Delegates should never meet at the Scientific Session because so many weighty problems had to be dealt with in such a short space of time that very rarely were they able to carry through to completion many things that were of utmost importance to medical practice today. This, however, represented a small group of men. This rather small group of individuals in many instances felt that the American Medical Association should prepare some skeleton plan of medical service with which all the county societies could immediately join in. A working basis could be developed from this plan which would eventually become universal for all the component societies of the American Medical Association.

In group B there were men who believed that a change in the delivery of medical care is impending and probably necessary. They would advise in this evolutionary development that all that is good and worth while in the present schemes in practice be preserved intact. They felt that it was necessary in this changed condition of practice to preserve all the fine traditions and high quality of medical care and the fine features of individualistic medical practice. These men approved of the small units of service over limited geographic areas that are being organized at the present time rather than of a large aggregation of units. They felt it would take at least five to ten years to study these schemes, and by that time many could

be correlated and regulated to prevent competition between them and also to avoid overlapping in their spheres of activity. They doubted whether any scheme for medical service would be applicable to all sections of the country. The difference in the character of the localities and of the people residing in them would necessitate differences of course in the schematic outline.

Group C, which carried definitely the largest number of physicians in America that I was able to see and whose views I was able to hear, felt that the Board of Trustees and the House of Delegates do recognize the medical situation which exists today. This situation is found not only in one part of America but practically throughout the United States. The men of this group felt that it was inevitable that the medical profession should suffer severely from the economic crisis of the past few years. Like other professional as well as business groups, we depend on the purchasing power and the prosperity of the general masses of our population. They felt it was equally inevitable in such a time of stress that considerable attention should be focused on the financial aspects of the practice of medicine. The stringency, in its acutest phase, made medical economics a matter of primary concern. Such a state of affairs, they felt, was not conducive to that balanced thinking which accompanies a sense of security and well being. Judgment is likely to become hasty and action is not always for the best. It is not surprising that in such a time of trial numerous schemes should be devised to change the existing order. Some of these plans have originated within and some outside of the medical profession. Some have received great support, with the hope that their application might result in an improved economic condition. With regard to the physician, many of these plans involve changes which social welfare workers, foundations and many industrialists have been working assiduously for many years to impose on us.

This movement inside the medical profession is paralleled by the appearance of *unsound schemes offered as cures for the economic ills of our general population*. The valley of every business cycle, when our fortunes are at low ebb, has ever been a fertile breeding ground for panaceas of all kinds. As the cycle begins the upward swing toward prosperity, the panaceas are abandoned and forgotten.

In such times the American Medical Association through its democratic system of representative bodies, the House of Delegates and the Board of Trustees, seeks to formulate policies and principles to guide its component societies and membership through the stormy waters of economic experimentation. The men of this group C of whom I am speaking were glad to know that many of the policies set forth by the Association are simply the restatement of fundamentals which our leaders for nearly a century have found to be essential to the preservation of the most advanced medical practice, as well as the best professional care to the public. They were pleased and gratified to hear that the aim of the American Medical Association is to preserve the individual private practice of medicine, with free and open competition among physicians and the maintenance of personal relationship of doctor and patient. The well considered opinion of leaders in medicine throughout the country is that once this principle is compromised the medical profession of this country is headed toward the status of serfdom.

They realized that there are some who hold that, unless the medical profession develops a new plan for the care of the masses, state medicine is inevitable and that the way to forestall this traditional bugbear is to set up organizations under medical control to perform the functions of a state system of medicine. However, these men felt that no more proved fallacy exists than this. The history of other countries clearly shows that voluntary prepayment and insurance schemes, in the hands of the profession at the outset, drift inevitably, as do all plans initiated by private groups, into bureaucratically administered compulsory insurance under governmental control. They felt that the most certain method of hastening state medicine is for the medical profession to institute radical changes in medical practice in the form of some experiment of this kind.

The medical profession may rest assured that its future depends on the defeat of the present trend toward general

socialization and the maintenance in America of at least a moderate individualism. The socialization of medicine is only one phase of the movement toward general socialization and the ultimate abandonment of the American individualistic system. We must accept the adversity as well as the prosperity which accompanies our continually changing times, knowing full well that the lean years of the economic cycle are compensated for by long periods of prosperity. The alternative is the bartering of our status as independent professional men for the dependent and fixed condition of government servitude.

In conclusion, a majority of the men whom I have met in this country felt that they had no great disapproval of the adoption of sickness insurance carried out by the local medical societies if it had the approval of the majority of the members. However, on the other hand, they were almost unanimous in their disapproval of the adoption of sickness insurance, either of the voluntary or of the compulsory variety, as a whole. They likewise disapproved of the extension of federal control of medicine.

#### Interpretation of Constitution and By-Laws

Dr. Frederic E. Sondern, New York, moved that, under the extraordinary circumstances involving the incapacity of the President-Elect, it would seem desirable to have an interpretation of the Constitution and By-Laws by the Judicial Council and to have that Council report to the House on the matter as soon as possible. The motion was seconded by Dr. Samuel J. Kopetzky, New York.

Dr. Holman Taylor, Texas, suggested that the motion be amended to request the Judicial Council also to analyze this situation and to recommend a procedure. The amendment was accepted and the motion as amended carried.

#### Address of Vice President Kenneth M. Lynch

The Speaker presented the Vice President, Dr. Kenneth M. Lynch, Charleston, S. C., who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

#### *Mr. Speaker, Mr. President and Representatives of the Greatest Medical Organization in Existence:*

I am not given to the use of superlative terms. I address you in this fashion deliberately not as a matter of compliment to you in return for your compliment to me, but in recognition of your accomplishment.

The present occasion has led me in recent days to look into some of the old proceedings of this body in its early days, and particularly into the minutes of the fourth annual convention, which was held in my own city in 1851.

There are many interesting, enlightening and helpful expressions and actions in the study of these old recordings, and I would recommend that it would be good for all of us in our present-day problems to give some study to them. I shall not presume on your time at the present to make tempting and perhaps profitable comparisons of the problems of this former day, now four score and five years ago. Those of the present are not so different. The difference is largely in degree and not particularly in kind. But I would in justification of my greeting to you recall what was interesting to observe in the minutes of the fourth annual session of the American Medical Association, that there was scepticism among the members of the Association and doubt from the European profession that the American Medical Association would prove worthy of its objectives.

In the intervening years this body has demonstrated its ability to carry forward those objectives toward accomplishment, and so my greeting to you. The American Medical Association, through its work particularly, has reached the peaks of success.

Permit me to remind you, however, that in journeying from the lowlands to the highlands the going is most arduous at the extremes. In the beginning the bogs and sloughs and roughness may defeat weak purpose and inefficient organization; after a full swing has got under way, progress may be com-

paratively easy, but when the heights are reached courage, stamina and unflinching resolution are essential if the route is to be completed.

There are obstacles of obstruction to overcome and pitfalls to avoid, but we have every confidence that our progress will not be altered in attempting to reach the ever present goal of improving service to life. As a process in your work let me commend the following principle quoted from the minutes of the American Medical Association in 1851:

"The only way to remove the errors is that old and homely way so effective in removing error on other subjects—the presentation of the truth. But the effort must be made in the right spirit. Ill natured attacks do no good. Railing never convinced any man of his error. Confidence in the power of truth, and charity toward the common propensity of the human mind to err should teach physicians patience in their attempts to convince their fellow men of their errors on so abstruse a subject as medicine. The lesson of patience will be better learned if we remember that most of the popular medical errors had a common origin with some that have prevailed among medical men, and that not a few took their rise first in the profession and afterward spread among the people. Too much importance, we think, has been generally attached to those means which are direct and too little to those which are indirect in their application."

## REPORTS OF OFFICERS

### Report of the Secretary

Dr. Olin West presented his report as Secretary, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

### Affiliate and Associate Fellowship Applications

On motion of Dr. H. B. Everett, Tennessee, seconded by Dr. John Z. Brown, Utah, and carried, the Affiliate and Associate Fellowship Applications in the hands of the Secretary were referred without discussion to the councils and sections indicated.

### Greetings from National Congress of Parents and Teachers

The Secretary presented the following telegram:

National Congress of Parents and Teachers extends cordial greetings to the American Medical Association in convention assembled with deep appreciation for its long continued cooperation.

MRS. B. F. LANGWORTHY.

### Report of the Board of Trustees

Dr. Rock Sleyster, Chairman, presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, except those portions of the report referring to the Bureau of Legal Medicine and Legislation and to the Bureau of Medical Economics, which were referred to the Reference Committee on Legislation and Public Relations.

### Supplementary Report of Board of Trustees

Dr. Rock Sleyster, Chairman, also presented the following supplementary report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, except the portion referring to the memorandums, which was referred to the Reference Committee on Executive Session:

#### RADIO ADVERTISING

In reference to the resolution relative to obviating the evil of radio broadcasting of medical misinformation, introduced to the House of Delegates last year by Dr. James F. Rooney, New York, and that condemning the broadcasting of misinformation pertaining to medicaments, food and cancer introduced by Dr. Holman Taylor, Texas, both of which were referred to the Board of Trustees, the Board would report that representations have been made by the Association to the broadcasting chains and to the Federal Communications Commission, which is concerned with radio broadcasting. There is a general recognition of the danger of such advertising, and the leading broad-

casting chains have announced censorship of medical advertising to go into effect at once with the elimination of advertising of cathartics, laxatives and other medicinal preparations, just as soon as current contracts expire.

The subject of radio advertising is, of course, also involved in the proposed new foods and drugs legislation. In many local communities, steps are being taken to bring pressure to bear on the management and ownership of these stations, with a view to eliminating false medical advertising. This is a reform in which progress must of necessity be slow. We are, however, continuing our efforts through popular education, using *HYGEIA* and the Bureau of Health and Public Instruction, as well as the informational service supplied by the Bureau of Investigation in the headquarters.

#### HYGEIA IN CCC CAMPS

The Board is glad to report that, pursuant to the resolution introduced in the House of Delegates last year by Dr. Ralph Fenton, Oregon, correspondence has been conducted with the Army Medical Department and that as a result some 3,000 subscriptions for *HYGEIA* have been promised. It is expected that these subscriptions for the CCC camps will begin with the July issue.

#### MEMORANDUMS FROM BUREAU OF LEGAL MEDICINE AND LEGISLATION

The Board presents two memorandums from the Bureau of Legal Medicine and Legislation, one dealing with the proposed omission of items referring to legitimacy and illegitimacy from standard forms for reports of births and stillbirths, and the other dealing with suggested limitation of right of certain physician-offenders against the Harrison Narcotic Act to obtain narcotic drugs for professional use and to prescribe such drugs professionally.

#### INVITATION TO ASSOCIATION TO MEET WITH CANADIAN MEDICAL ASSOCIATION IN 1939

An invitation from the Canadian Medical Association for a joint meeting in Toronto in 1939 received consideration of the Board and was referred to the House of Delegates with a statement to the effect that it does not seem expedient to make plans for a joint meeting with the Canadian Medical Association in the near future.

#### Report of the Judicial Council

Dr. George Edward Follansbee, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers.

#### Report of the Council on Medical Education and Hospitals

General Merritte W. Ireland, Washington, D. C., presented the report of the Council on Medical Education and Hospitals, together with the two following supplementary reports, which was referred to the Reference Committee on Medical Education:

#### Supplement A. Schools for Physical Therapy Technicians

The preliminary study of schools for physical therapy technicians by the Council on Medical Education and Hospitals, authorized by the House of Delegates during the annual convention of the American Medical Association at Cleveland, June 11-15, 1934, has been completed.

Thirty-seven schools were included in the survey. After carefully studying the inspection reports and securing the opinions of the Council on Physical Therapy, the American Congress on Physical Therapy and the American Physiotherapy Association, the following essentials are proposed:

#### ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR PHYSICAL THERAPY TECHNICIANS

##### I. ORGANIZATION

1. A school for physical therapy technicians should be incorporated as or under a nonprofit institution. Its board of trustees should be composed of public spirited men or women having no

financial interest in the operations of the school. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, that fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

2. Affiliation with a college, university or medical school is highly desirable but is not an absolute requirement.

## II. FACULTY

3. The school should have a competent teaching staff, graded and organized by departments. Appointments should be based on thorough education and training and successful teaching experience. Nominations for faculty positions should be made in accordance with academic custom. The staff should include not less than one qualified salaried instructor and in each institution where practical training is carried on not less than one qualified physical therapist. The question of full time and part time appointments is not as important as the qualifications of the instructors, who should be specialists or exceptionally well trained and well qualified in the lines they are teaching.

## III. PLANT

4. The school should own, or enjoy the use of, buildings sufficient in size to provide adequate lecture rooms, class laboratories and administration offices. Adequate equipment should include anatomic charts, manikins, models, stereopticons and other aids to effective teaching. It is suggested that dissecting materials should be provided to enable each student to dissect or have the benefit of demonstration of dissection of at least the lateral half of the human cadaver. Skeletons and disarticulated bones should be supplied. There should be a library receiving regularly all the scientific periodicals pertaining to physical therapy, current numbers of which should be easily accessible to the students.

## IV. CLINICAL FACILITIES

5. Provision should be made for each student to receive practice training adequate in kind and amount under competent supervision in physical therapy in a hospital or other institution acceptable to the Council on Medical Education and Hospitals of the American Medical Association.

## V. RESOURCES

6. Experience has shown that a modern school of physical therapy cannot as a rule be maintained by the income from students' fees. No physical therapy school, therefore, should expect to secure approval which does not have a substantial income in addition to students' fees.

## VI. ADMINISTRATION

7. There should be careful and intelligent supervision of the entire school by an executive officer who, by training and experience, is fitted to interpret the prevailing standards in physical therapy education, and who is clothed with sufficient authority to carry them into effect.

8. There should be satisfactory records, showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Except for good cause, such as for illness, no credit should be given for any course when the attendance has been less than 90 per cent of the full time.

## VII. REQUIREMENTS FOR ADMISSION

9. Candidates for admission should be able to satisfy one of the following requirements:

- Two years or sixty semester hours of college, including courses in physics and biology.
- Graduation from an accredited school of nursing.
- Graduation from an accredited school of physical education.

Courses in general physics, chemistry and biology are highly recommended for all who seek to enter training in physical therapy.

10. The admission of students to the physical therapy school must be in the hands of a responsible committee or examiner,

whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the physical therapy school is an integral part of the university, this work usually devolves on the university examiner.

11. Advanced standing may be granted to students for work done in other acceptable physical therapy schools or hospital departments, provided the entrance requirements and other essentials herein set forth have been complied with. Official verification of the student's previous physical therapy work should be obtained by direct correspondence with the schools previously attended, and his preliminary qualifications should also be verified and recorded the same as for first-year students.

12. Complete physical examination of each student admitted should be conducted under the auspices of the school.

## VIII. PUBLICATIONS

13. The school should issue, at least annually, a bulletin setting forth the character of the work which it offers. Such announcement should contain a list of the members of the faculty with their respective qualifications.

## IX. MINIMUM CURRICULUM

Subjects	Hours	
	Theory	Laboratory and Practice Training
Anatomy (including applied anatomy, demonstration on cadaver and lecture).....	210	...
Clinical practice .....	...	400
Electrotherapy .....	30	45
Ethics and administration.....	5	..
Hydrotherapy .....	5	15
Massage .....	15	45
Pathology .....	30	..
Physiology .....	30	45
Principles of physical therapy as applied to:		
Medicine .....	15	30
Neurology .....	10	15
Orthopedics .....	15	30
Surgery (including surgical observation)..	15	30
Psychology .....	15	..
Therapeutic exercise.....	30	75
Electives .....	45	..
Total .....	470	730
		1,200 hours

Suggested electives: asepsis, bandaging, first aid, history of physical therapy, hygiene, joint measurements, office routine, occupational therapy, records, social service.

All subjects should be taught by qualified teachers.

Length of course: Not less than nine months.

## Supplement B. Schools for Clinical Laboratory Technicians

During the past two years the Council on Medical Education and Hospitals has made a study of schools for the training of clinical laboratory technicians. One hundred and ninety-six schools have been examined and their procedures analyzed. After consultation with the American Society of Clinical Pathologists, the following standards are proposed as a basis for the recognition of schools for laboratory technicians:

## ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR CLINICAL LABORATORY TECHNICIANS

### I. ORGANIZATION

1. Acceptable schools for training laboratory technicians may be conducted by general hospitals, colleges or universities. Consideration may be given courses operated by public health laboratories or by pathologists.

2. Responsibility for courses in hospitals should be placed on the hospital administration rather than the laboratory director. In colleges and universities this responsibility is on the controlling board, as for other courses.

3. Resources for continued operation of the school should be insured through regular budgets, gifts or endowments; but not entirely through students' tuition fees. Experience has shown that commercial schools operated for profit frequently do not



adhere to proper ethical and educational standards and are, as a rule, not considered acceptable.

4. There must be available transcripts of high school, college work and other credentials. Attendance and grades of students shall be carefully recorded, by means of which an exact knowledge may be obtained regarding each student's work.

## II. FACULTY

5. The school should have a competent teaching staff. The director must be a graduate in medicine and a pathologist or clinical pathologist of recognized ability. He shall take part in and be responsible for the actual conduct of the training course. He shall be in daily attendance for sufficient time to supervise properly the laboratory work and teaching.

6. In laboratory practice the enrolment shall not exceed one student to each member of the teaching staff. The staff should include not less than one salaried instructor who is a registered technician or eligible for registration, in addition to the laboratory director.

## III. CLINICAL FACILITIES

7. Each student should receive practice training, adequate in kind and amount, under competent supervision, in a hospital laboratory. The hospital should be registered by and be otherwise acceptable to the Council on Medical Education and Hospitals of the American Medical Association and have a minimum of 2,000 yearly admissions.

8. Adequate space, light and modern equipment shall be provided in the laboratory department. A library containing up-to-date references, texts and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained.

9. Satisfactory record systems shall be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared.

## IV. CURRICULUM

10. A. Candidates for admission should be able to satisfy one of the following requirements:

1. One year of college work, including chemistry and biology from a recognized college or university. Jan. 1, 1938, this requirement is to be raised to two years of college work.
2. Graduation from a school of nursing recognized by the state board of nurse-examiners, and in addition college chemistry.

B. The course of training shall be not less than twelve months in duration and shall include the following divisions:

1. Biochemistry.
2. Hematology.
3. Bacteriology.
4. Parasitology.
5. Histologic technic.
6. Serology.

The instruction shall include:

1. Text assignments.
2. Lectures.
3. Demonstrations.
4. Quizzes.
5. Examinations—written, oral and practical.

## V. ETHICS

11. Exorbitant fees and commercial advertising shall be considered unethical.

12. Schools conducted for the purpose of substituting students for paid technicians will not be considered for approval.

### Report of the Council on Scientific Assembly

Dr. James E. Paullin, Atlanta, Ga., in the absence of the Chairman of the Council, Dr. Irvin Abell, Kentucky, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

### Supplementary Report of Council on Scientific Assembly

Dr. Olin West, Secretary, presented the following report dealing with blood grouping in establishing the paternity of a child, which was referred to the Reference Committee on Sections and Section Work:

The Committee of the Council on Scientific Assembly has looked into the question of blood grouping in establishing the paternity of a child, and it wishes to report at the present time that, from its knowledge of this subject and a careful study of the literature, it is not possible to state with any degree of certainty that the child is an offspring of a certain adult or that the latter is the father or mother of the child.

The committee recommends that the subject should have more thorough study and would suggest that this study be made by a group of investigators having a first-hand knowledge of this matter. It is suggested that Drs. Landsteiner, Wiener and Levine be asked by the Board of Trustees to look into this matter further.

### Report of Committee to Study Contraceptive Practices and Related Problems

Dr. James R. Bloss, Board of Trustees, announced that there would be ready for presentation at the Executive Session a report of the Committee to Study Contraceptive Practices and Related Problems, and the Speaker announced that this was referred to the Reference Committee on Executive Session.

### Report of Reference Committee on Rules and Order of Business

Dr. W. H. Seemann, Chairman, presented the following report:

Your Reference Committee on Rules and Order of Business has carefully considered that portion of the Speaker's Address which refers to executive sessions, and offers the following resolutions:

*Resolved*, That the Speaker of the House of Delegates, now in session, be empowered, at his discretion, to refer any resolution to the Special Reference Committee on Executive Session; and be it further

*Resolved*, That the Speaker be empowered to declare an executive session whenever he deems one necessary.

Your Committee suggests that members having resolutions to present at this session kindly confer with the Speaker beforehand in order that proper disposition of the resolutions may be made.

Respectfully submitted.

W. H. SEEMANN, Chairman.  
E. J. BEST.  
J. H. FITZGIBBON.  
J. C. FLIPPIN.  
C. W. WAGGONER.

On motion of Dr. Seemann, seconded by Dr. H. B. Everett, Tennessee, and carried, the report was adopted.

## NEW BUSINESS

### Consideration of a Bill (S. 4516) to Provide for Tuberculosis Hospitals and for Their Operation

Dr. Horace Reed, Oklahoma, requested that the proper reference committee of the House consider the desirability of a bill (S. 4516) to provide for tuberculosis hospitals and for their operation. The Speaker referred this to the Reference Committee on Legislation and Public Relations.

### Resolution on Status and Responsibility for Answers Published in Queries and Minor Notes in The Journal

Dr. Albert Soiland, Section on Radiology, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

The following resolution was introduced by Dr. Thomas A. Groover, Washington, D. C., before the Executive Session of the Section on Radiology of the American Medical Association



at the Atlantic City session in 1935, and was adopted by unanimous vote:

WHEREAS, The answers published in the Department of Queries and Minor Notes of THE JOURNAL of THE AMERICAN MEDICAL ASSOCIATION, being unsigned, are readily construed as representing the official opinion of the American Medical Association, thus giving them a standing and authority which would otherwise not obtain, and

WHEREAS, The answers are obviously on occasion merely the expression of individual opinion and should be interpreted in the light of that fact, and

WHEREAS, Without such interpretation the answers are misleading and deceptive and capable of working a serious injustice to many who may hold opinions at variance with those expressed; therefore be it

*Resolved*, That the Section on Radiology of the American Medical Association recommends to the House of Delegates that appropriate steps be taken to make plain to the casual readers of THE JOURNAL the status of and responsibility for the answers published in the Department of Queries and Minor Notes

### Resolutions on Taking Steps That Will Result in Practice of Medicine Being Conducted by Physicians and Not by Hospitals

Dr. Albert Soiland, Section on Radiology, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, Certain lay groups in this country are arranging for or attempting to arrange for the provision of diagnostic medical services along with and as a part of hospital services, and

WHEREAS, The provision of such diagnostic medical services must inevitably foster fundamental changes in the practice of medicine, and

WHEREAS, The American Medical Association is of the opinion that the practice of medicine should at all times be confined to fully licensed physicians, and

WHEREAS, Article 6, Section 4, of the Principles of Medical Ethics sets forth the following

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

Now therefore be it

*Resolved*, That the House of Delegates of the American Medical Association is unalterably opposed to such practices, and be it further

*Resolved*, That the House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so called technical and professional portions, and be it further

*Resolved*, That the Council on Medical Education and Hospitals of this Association be and is hereby authorized and directed to take such steps as will result in the practice of medicine being conducted by physicians and not by hospitals, and be it further

*Resolved*, That the said Council be and hereby is directed annually to report to this House of Delegates such progress as it is able to achieve from time to time

### Resolutions Disapproving Division of Any Branch of Medicine Into Technical and Professional Portions

Dr. Edward M. Palette, California, presented the following resolutions, printed in the Handbook, which were referred to the Reference Committee on Executive Session:

Under instructions of the Council of the California Medical Association, the California Medical Association delegates to the 1936 Kansas City session are directed to introduce the following resolutions in the American Medical Association House of Delegates:

WHEREAS, Certain organized lay groups in this country are endeavoring to arrange for the provision of diagnostic medical service along with and as part of hospital services, and

WHEREAS, The provision of such diagnostic medical service will inevitably foster fundamental changes in the practice of medicine, and

WHEREAS, Such changes in the practice of medicine may well result in deterioration of our present medical standards and especially in deterioration in the quality of medical care furnished to hospital patients, now therefore be it

*Resolved*, That it is the official policy of the House of Delegates of the American Medical Association that it disapproves of the division of any branch of medicine into technical and professional portions, and be it further

*Resolved*, That copies of this resolution shall be brought to the attention of the American Hospital Association and its affiliated groups, to the end that existing arrangements permitting division in medical practice be terminated as speedily as possible

### Resolution on Favoring One Basic Law Governing Industrial Health Propositions

Dr. A. R. McComas, Missouri, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Under instruction of the house of delegates of the Missouri State Medical Association at the seventy-ninth annual meeting held in Columbia, April 13-15, 1936, Missouri delegates to the 1936 Kansas City session desire to introduce the following resolution:

WHEREAS, The incidence of industrial diseases is growing more and more serious each day with special reference to chest condition produced by the inhalation of dust, and

WHEREAS, There is no uniform law governing the operations of various industries in our many states; and

WHEREAS, Neither labor nor industry knows where it stands, therefore, both are at a disadvantage, and

WHEREAS, There is no adequate uniform regulation to protect either the laborer or the industry; and

WHEREAS, Under the existing circumstances it is impossible for the small industry to carry insurance to protect its existence on account of high premiums, and

WHEREAS, Due to the lack of uniformity of laws large insurance companies are reluctant to take the risk of carrying any company who may have the least semblance of dust during its operation because there is no adequate law to force the employee to obey the rules of the company, and

WHEREAS, Most of the larger companies are engaged in interstate transactions and, therefore, difficult for each state to enforce the laws that already exist, and

WHEREAS, Certain companies are daily moving from one state to another in order that they may have protection, or that they may dodge some adverse legislation that may be passed while they are operating in said state; and

WHEREAS, Due to the lack of uniformity of law concerning these health problems, many cities and states are losing incomes that they are justly entitled to by virtue of the fact that the company under consideration is located in said state or city where prohibitive legislation is bad, therefore be it

*Resolved*, That it is the official policy of the House of Delegates of the American Medical Association to favor either federal legislation on these points or some uniform compact between states so that there will be one basic law governing all these health propositions

### Resolutions on Disapproval of Division of Radiology Detrimental to Best Interests of the Public, the Medical Profession and the Hospitals

Dr. Francis F. Borzell, Pennsylvania, introduced by title resolutions dealing with disapproval of division of radiology, which were referred to the Reference Committee on Executive Session.

### Resolution Requesting Establishment of Committee to Study Scientific Status and Development of Progress in Air Conditioning

Dr. Arthur J. Bedell, New York, introduced the following resolution, which was referred to the Board of Trustees

WHEREAS, The relationship existing between temperature, humidity and other factors in the atmosphere are matters of great concern to general health, and

WHEREAS, Mechanical and other services are being developed for modifying and controlling the air we breathe and the conditions of respiration, therefore be it

*Resolved*, That the Board of Trustees establish a committee and provide sufficient funds for ascertaining the scientific status of methods and the development of progress in air conditioning

### Resolution Requesting the Appointment of Committee on Asphyxia

Dr. Frederic E. Sondern, New York, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The aims and purposes of the Society for the Prevention of Asphyxial Death were approved by the Medical Society of the State of New York, May 14, 1934, and

WHEREAS, These aims and purposes were later approved by the House of Delegates of the American Medical Association, June 12, 1934, and

WHEREAS, The Society for the Prevention of Asphyxial Death was invited by the Bureau of Exhibits of the American Medical Association to prepare an exhibit for the Scientific Exhibit at the regular session of the American Medical Association, which was held at Atlantic City in June 1935; and

WHEREAS, The Scientific Exhibit of the American Medical Association subsidized space for eight booths on the Prevention of Asphyxial Death at this exhibit; and

WHEREAS, A favorable impression was created by this exhibit, and the need for an organized movement to prevent asphyxial death was emphasized; and

WHEREAS, It has been satisfactorily established that asphyxiation constitutes a major medical problem, representing a mortality of at least 50,000 deaths a year; and

WHEREAS, A National Committee on Hospitals has been established by the Society for the Prevention of Asphyxial Death, consisting of 300 hospital superintendents from forty-five states, as well as a National Committee on Anesthesia, representing more than 50 per cent of the physicians registered as anesthetists in the 1934 Directory of the American Medical Association; therefore be it

*Resolved*, That the House of Delegates of the American Medical Association, at the Kansas City session to be held in May 1936, be petitioned to create a Committee on Asphyxia for the further study of this problem.

#### Resolution on Entrance Requirements to Medical Courses of Educational Institutions

Dr. H. A. Luce, Michigan, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, The relationship between physician and patient embodies many factors which must be considered in the determination of an individual's fitness to become a doctor of medicine; and

WHEREAS, The entrance requirements to the degree of Doctor of Medicine cannot be evaluated on a strictly academic basis; therefore be it

*Resolved*, That the House of Delegates of the American Medical Association transmit to the Council on Medical Education and Hospitals the recommendation that entrance requirements to the medical courses of the educational institutions of the United States be conditioned on the character, personality, adaptability, social fitness and motivations of the applicant as well as on his academic training.

#### Resolutions Condemning as Unethical the Listing of Physicians by Specialty in Directories Published by Commercial Concerns

Dr. William R. Brooksher, Arkansas, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Certain commercial interests are publishing medical directories, listing physicians by specialty and otherwise, as available for insurance and compensation work, and other professional services; and

WHEREAS, Participation by listing in these lay publications merely serves for the profit of the promoters and is furthermore technically indirect solicitation of patients; therefore be it

*Resolved*, That the Arkansas Medical Society condemns these practices as unethical and forbids its members to continue listing their names in such directories; and be it further

*Resolved*, That the Arkansas Medical Society requests the House of Delegates of the American Medical Association to take similar action.

#### Resolution on Granting Approval to Hospitals for General Internships or Residencies

Dr. John H. Fitzgibbon, Oregon, presented by title a resolution dealing with the granting of approval to hospitals for general internships or residencies, which was referred to the Reference Committee on Executive Session.

#### Resolution on Opposition to Granting a Single Short Wave Frequency to Commercial Concerns for Emergency Communications to Physicians

Dr. John H. Fitzgibbon, Oregon, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, the owner of a commercial telephone exchange now selling an emergency telephone service in an Eastern city has petitioned the Federal Communications Commission for the allocation to him of a single short wave frequency to be used in a projected radio-paging service to be sold to the medical profession in the larger cities; and

WHEREAS, The granting of such a petition by the Federal Communications Commission would confer on a commercial concern, organized for profit, a nation-wide monopoly of emergency radio communication with the entire medical profession, to the possible future detriment of the public and the medical profession; therefore be it

*Resolved*, That the House of Delegates of the American Medical Association go on record as opposing the granting by the Federal Communications Commission of a single short wave frequency to any commercial concern for the purpose of emergency communication with physicians and as favoring the allocation of frequencies for this purpose to individual local stations, and this only following the recommendation of the local medical society in the city concerned.

#### Resolutions on Contraception

Dr. Olin West, Secretary, announced that he had received a resolution dealing with contraception from the secretary of the Montgomery County, Pennsylvania, Medical Society and from the secretary of the Chicago Gynecological Society, but that this matter had already been dealt with by the appointment of a committee. The resolutions were referred to the Reference Committee on Executive Session.

#### Communication on Cooperation with United States Constitution Sesquicentennial Commission

Dr. Olin West, Secretary, presented a communication and suggested form of resolution, received from the Director General of the United States Constitution Sesquicentennial Commission, to be adopted by national and state organizations to cooperate with the commission in preparing and executing plans for a fitting celebration of the one hundred and fiftieth anniversary of the formation of the constitution of the United States. These were referred to the Reference Committee on Hygiene and Public Health.

The meeting recessed at 1:15 p. m., to reconvene on Tuesday morning, May 12, at 9:30.

(To be continued)

### REGISTRATION AT KANSAS CITY

The total registration at the Kansas City session was 6,824. Below are given two summaries—one by sections and one by states:

#### Registration by Sections

Practice of Medicine.....	2,250
Surgery, General and Abdominal.....	1,141
Obstetrics, Gynecology and Abdominal Surgery.....	420
Ophthalmology.....	338
Laryngology, Otology and Rhinology.....	256
Pediatrics.....	400
Pharmacology and Therapeutics.....	39
Pathology and Physiology.....	171
Nervous and Mental Diseases.....	193
Dermatology and Syphilology.....	194
Preventive and Industrial Medicine and Public Health.....	123
Urology.....	189
Orthopedic Surgery.....	180
Gastro-Enterology and Proctology.....	181
Radiology.....	266
Miscellaneous Topics.....	12
Tuberculosis.....	91
Two or more sections or no section marked.....	380
Total.....	6,824

#### Registration by States

Alabama.....	35	Nevada.....	2
Arizona.....	22	New Hampshire.....	4
Arkansas.....	106	New Jersey.....	38
California.....	199	New Mexico.....	27
Colorado.....	205	New York.....	243
Connecticut.....	35	North Carolina.....	9
Delaware.....	6	North Dakota.....	20
District of Columbia.....	50	Ohio.....	230
Florida.....	31	Oklahoma.....	373
Georgia.....	42	Oregon.....	23
Idaho.....	10	Pennsylvania.....	128
Illinois.....	589	Rhode Island.....	8
Indiana.....	129	South Carolina.....	5
Iowa.....	351	South Dakota.....	22
Kansas.....	1,001	Tennessee.....	85
Kentucky.....	52	Texas.....	263
Louisiana.....	53	Utah.....	28
Maine.....	17	Vermont.....	8
Maryland.....	20	Virginia.....	26
Massachusetts.....	85	Washington.....	35
Michigan.....	160	West Virginia.....	23
Minnesota.....	174	Wisconsin.....	123
Mississippi.....	14	Wyoming.....	14
Missouri.....	1,317	Miscellaneous.....	26
Montana.....	11		
Nebraska.....	347	Total.....	6,824

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**Personal.**—Dr. Wells F. Smith, Little Rock, has been elected president of the state board of health.—Dr. John C. Pate has been elected mayor of Leslie.

**State Medical Election.**—Dr. Oscar J. T. Johnston, Batesville, was chosen president elect of the Arkansas Medical Society at its recent annual meeting in Hot Springs National Park. Dr. George B. Fletcher, Hot Springs National Park, was installed as president. Vice presidents are Drs. Arthur G. Sullivan, Hot Springs National Park; Ruth J. Ellis, Fayetteville, vice president, and Bonny M. Stevenson, West Memphis. Drs. Royal J. Calcote, Little Rock, and William R. Brooksher, Fort Smith, are treasurer and secretary respectively.

**Society News.**—At a meeting of the Second Councilor District Medical Society in Heber Springs, April 13, speakers included Drs. Lee Vallette, Parmley on fractures; Joseph H. Sanderlin, trichomonas vaginalis vaginitis; Raymond C. Cook, ocular manifestations of some systemic diseases, and Darmon A. Rhinehart, radiation in the treatment of fibroid tumors and menorrhagia from other causes. All are from Little Rock.—Members of the Sebastian County Medical Society presented the program of the Pulaski County Medical Society, April 13: Drs. Arthur F. Hoge and Charles T. Chamberlain, Fort Smith, spoke on "Surgery in Diabetes" and "Venous Pressure" respectively.—The Southeast Arkansas Medical Society was addressed at Lake Village, April 13, by Drs. Joseph F. Shuffield, Little Rock, on "Treatment of Fractures" and Guy C. Jarratt, Vicksburg, "Pyuria in Children."

### DISTRICT OF COLUMBIA

**Medical Bill in Congress.**—H. R. 12424 has passed the House, providing for the examination and registration of beauty culturists in the District of Columbia.

**The Davidson Lecture.**—The competition to select the person to deliver the annual Davidson Lecture is open, the Medical Society of the District of Columbia announces. Physicians and scientists working in the District are eligible. Essays must be signed by a nom de plume, and the identification of the author sealed in an envelop bearing on its surface the same nom de plume. The essay must not have been previously published and must be submitted to the secretary of the district society, 1718 M Street, N. W., Washington, not later than July 1, 1937. The executive committee of the society in January decided to select the Davidson lecturer in this manner rather than by nomination as it was done formerly. The lecture is named in honor of Dr. Edward Young Davidson, who was largely responsible in bringing to completion the society's project of building its own home.

### GEORGIA

**State Medical Election.**—Dr. George A. Traylor, Augusta, was chosen president-elect of the Medical Association of Georgia at the annual meeting in Savannah, April 24, and Dr. Benjamin H. Minchew, Waycross, was installed as president. Vice presidents are Drs. Cornelius F. Holton, Savannah, and James B. Kay, Byron. The next annual meeting will be held in Macon.

### ILLINOIS

**District Meeting.**—The sixty-second annual meeting of the District Medical Society of Central Illinois was held in Springfield, April 21. Clinics at St. John's Hospital were conducted by Drs. Charles B. Reed and Dallas B. Phemister, Chicago, and Ralph A. Kinsella, St. Louis. Others on the program included:

Dr. Frederick W. Light Jr., Springfield, The Importance of Biopsy in Diagnosis.  
Dr. Perry J. Melnick, Decatur, Accurate Diagnosis in Lymph Node Enlargements.  
Drs. Stuart Broadwell Jr. and Emil L. Bernard, Springfield, Treatment of Stricture of the Esophagus.  
Dr. Frank Jirka, state health director, Springfield, Public Health Problems.  
Dr. Rolfand L. Green, Peoria, Problems in Internal Medicine.  
Drs. William J. Morginson and Gerald C. Hunt, Springfield, Diseases of the Skin.  
Drs. Samuel N. Clark, Jacksonville, Early Manifestations of Mental Disorder.  
Howard J. Shaughnessy, Ph.D., Springfield, Answers to Questions on Interpretation of Laboratory Reports.

**Society News.**—Dr. Frederick A. Willis, Rochester, Minn. discussed "Coronary Disease with Special Reference to Prognosis in Coronary Thrombosis" before the Peoria City Medical Society, April 21. Dr. Dean Lewis, Baltimore, addressed the society, May 5, on "Endothelial Tumors."—Dr. Gershom J. Thompson, Rochester, Minn., addressed the Stephenson County Medical Society at Freeport, April 9, on "Diseases of the Prostate Gland."—Dr. Guy M. Cushing, Chicago, read paper before the Will-Grundy County Medical Society, May 1, entitled "Acute Perforating Ulcer."—At a meeting of the Henry County Medical Society, May 14, Dr. Raymond W. McNealy, Chicago, spoke on "Biliary Tract Disease from the Surgical Aspect," and Dr. Andrew C. Ivy, Chicago, "Therapy of Biliary Tract Disease from the Viewpoint of Applied Physiology."—At a meeting of the St. Clair County Medical Society in East St. Louis, May 7, Dr. Vincil Rogers Deaki St. Louis, discussed the Corbus-Ferry vaccine for the treatment of gonorrhea.

### CHICAGO

**Hobby Exhibit.**—Members of the staff of the Illinois Masonic Hospital held their first annual hobby exhibit as feature of National Hospital Day, May 12. The exhibit included flowers grown by Dr. John R. Harger; cartoons by Dr. Clifton K. Timmons, and war souvenirs by Drs. James J. Griffin, superintendent of the hospital, and Merritt Owen W. kins. Dr. Carl F. Steinhoff displayed figures of his drum and bugle corps, fashioned from papier-mâché.

**Society News.**—At a meeting of the Chicago Pathologic Society, May 11, Dr. Rudolph Kronfeld spoke, among others on "Histopathology of Dental Infections" and Drs. Hova Zeitlin and Ben W. Lichtenstein, "Cysts of the Third Ventricle with Colloid-like Contents."—The Chicago Society of Allergy was addressed, May 18, by Drs. Ralph H. Scull and Francis L. Foran on "Hypersensitiveness in Chronic Flexural Eczema: A Study of Fifty-Five Cases"; Townsend B. Friedman, "Allergy in Children," and Leon Unger, "Asthma in Children: Results of Treatment."—At a meeting of the maternal welfare committee of the Chicago Gynecological Society, May 1, the theme for discussion was "Deaths in 1934 Following Forceps Delivery," presented by Dr. Emil A. Rach.

**Remington Medal Awarded to Professor Gathercoal.**—Edmond Norris Gathercoal, professor of pharmacognosy, University of Illinois School of Pharmacy, has been awarded the Remington Medal for 1936 in recognition of his service as chairman of the revision committee of the National Formulary VI, his work in promoting higher standards for pharmaceutical products, for research in pharmacognosy and for his many years of service as a teacher. After graduation from the University of Illinois College of Pharmacy in 18 he entered Rush Medical College, but circumstances prevented completion of the course. He has served on the revision committee of the U. S. Pharmacopeia and has been chairman of the revision committee of the National Formulary since 192. The medal is presented annually by the New York branch of the American Pharmaceutical Association.

### INDIANA

**Hospital News.**—A supervoltage x-ray machine for the treatment of cancer has recently been installed in St. Joseph's Hospital, South Bend, costing \$225,000. The machine generates 400,000 volts of electricity.

**Northern Tri-State Meeting.**—Dr. William H. Marshall, Flint, Mich., was chosen president of the Northern Tri-State Medical Association at its sixty-third annual meeting in Fort Wayne, April 14. Other officers are Drs. Glenn E. Jones, Lima, Ohio, vice president; Robert H. Elrod, Toledo, Ohio, secretary. The 1937 meeting will be held in Jackson, Mich. Papers were presented by the following physicians:

Max M. Peet, Ann Arbor, Splanchnic Section for the Treatment of Hypertension.  
Robert M. Moore, Indianapolis, Conditions Which Occasionally Resemble Coronary Occlusion.  
Archibald L. Hoynes, Chicago, Progress in the Management of Contagious Disease.  
Anton J. Carlson, Chicago, Mechanism of Control of the Endocrine Glands.  
William E. Lower, Cleveland, The Prostatic Question.  
Claude F. Dixon, Rochester, Minn., Increasing Curability of Colonic Carcinoma.  
Louis H. Segar, Indianapolis, Recent Advances in Pediatrics.  
Heinrich A. Reye, Detroit, Importance of the Physician as a Marriage Counselor.  
Clifford J. Barborka, Chicago, A Practical Discussion of Treatment by Diet.  
Ferris Smith, Grand Rapids, Reconstructive Surgery.  
Claude S. Beck, Cleveland, The Heart as a Surgical Organ (motion pictures).

## KANSAS

**Personal.**—Dr. Otis B. Wyant, Winfield, was guest of honor at a banquet, April 2, given by the Cowley County Medical Society to observe his completion of fifty years in the practice of medicine; he was presented with a fifty year gold membership medal.

**Annual Spring Assembly.**—The Sedgwick County Medical Society conducted its annual spring assembly in the Allis Hotel, Wichita, April 14. Members of the society and the staff of the Sedgwick County Hospital presented the clinics. Guest speakers were Drs. John W. Duncan, clinical professor of surgery, Creighton University School of Medicine, Omaha, on "Carcinoma of the Breast," and Maurice C. Howard, associate professor of medicine at Creighton University, on "The Irregular Heart."

## KENTUCKY

**Society News.**—Dr. John Walker Moore, dean, University of Louisville School of Medicine, addressed the Louisville Medico-Chirurgical Society, April 24, on "Effect of Heat Upon the Circulation of Normal and Abnormal Individuals."—Dr. Stephen C. McCoy, Louisville, addressed the Jefferson County Medical Society, April 6, on "Urinary Tract Injuries."

**Death Rate Declined in 1935.**—The general death rate in Kentucky declined slightly from 11.4 in 1934 to 11.1 in 1935, and the rates for several important causes of death were reduced, according to the state health department. The infant death rate fell from 68.2 in 1934 to 63.4 in 1935. Heart disease caused 5,260 deaths in 1935, 5,456 in the previous year; cancer caused 1,959 last year, compared with 1,989 in 1934. The number for pneumonia fell from 2,400 to 2,273. The diphtheria death rate decreased from 13.6 in 1934 to 10.3 in 1935; that for typhoid from 11.1 to 9.1. Automobile accidents caused 666 deaths as compared with 649 the previous year.

## MARYLAND

**Hospital News.**—Dr. Walter Bauer, Boston, addressed the staff of University Hospital, Baltimore, March 16, on hypertrophic arthritis.

**New Venereal Disease Clinic.**—The Baltimore health department opened a clinic for the treatment of syphilis in colored women patients, January 7. The new unit will cooperate with the antepartum clinic conducted in the same building by the maternity division of the bureau of child hygiene.

**Conference of Health Officers.**—The sixteenth annual conference of health officers and boards of health of Maryland was held in Baltimore, May 8. Speakers included Dr. Robert H. Riley, director, Maryland State Department of Health, and the governor, Harry W. Nice. In addition, the following physicians, among others, spoke:

Clifford E. Waller, assistant surgeon general, U. S. Public Health Service, Social Security Act in Its Relation to Public Health.  
Lloyd D. Felton, Baltimore, Present Status of Treatment of Pneumonia.  
Albert S. McCown, Washington, D. C., Maternal and Child Health in Relation to the Social Security Act.  
George H. Ramsey, Albany, N. Y., Modern Methods for the Control of Syphilis.  
William Ross Cameron, Hagerstown, Problem of Typhoid Carriers with Special Reference to Recent Outbreaks.

Dr. Huntington Williams, commissioner of health of Baltimore, and Mayor Howard W. Jackson were on the program.

## MASSACHUSETTS

**Society News.**—Dr. Clifford L. Derick, Boston, addressed the Worcester North District Medical Society in Fitchburg, April 22, on "Staphylococcus Infection and Its Treatment."—A paper on "Frontal Bone Osteomyelitis" by Drs. Charles A. Croissant, Philip H. Cook and John F. Wonson was presented before the Worcester District Medical Society in Worcester, April 8.—Dr. Abraham Myerson, Boston, addressed the New England Society of Psychiatry in East Gardner, April 22, on "The Neuroses."

**Dr. Hunt Honored.**—Dr. Reid Hunt, who is retiring this year as professor of pharmacology at Harvard Medical School, Boston, was guest of honor at a gathering in the Harvard Club of Boston, April 20, in celebration of his sixty-sixth birthday. Dr. C. Sidney Burwell, dean of the medical school, was toastmaster; speeches were made by A. Lawrence Lowell, LL.D., James F. Norris, Ph.D., Drs. Ross G. Harrison, New Haven, Conn., Ko K. Chen, Indianapolis, William Worth Hale and Gustave Philip Grabfield, Boston. Presentation was made of an etched portrait of Dr. Hunt, which will hang in the medical school.

**Portrait of Dr. Keep.**—A portrait of Dr. Nathan Cooley Keep, a graduate of Harvard Medical School and the first dean of the Harvard Dental School, was unveiled in Vanderbilt Hall of the university, April 3, as a special feature of the annual Alumni Day celebration or joint clinical meeting of the Harvard Dental Alumni Association and the Harvard Odontological Society. The portrait was the gift of the artist, Mrs. Marie Danforth Page, whose husband is a grandson of Dr. Keep, and it was unveiled by Miss Elizabeth Keep, the great-granddaughter of Dr. Keep. Dr. Keep graduated from the medical school in 1827. He assisted in the founding of the Massachusetts Dental Society, serving as its first president.

## MICHIGAN

**Medical Museum.**—A museum of old surgical instruments and medical appliances has been established in the University Hospital, University of Michigan School of Medicine, Ann Arbor. Dr. Frederick A. Collier, professor of surgery at the medical school, is soliciting objects which may be given or loaned.

**Committee to Study Medical Jurisprudence.**—A joint committee of physicians and attorneys was appointed, March 18, by the state bar association and the Michigan State Medical Society to consider problems of medical jurisprudence. Members of the committee are: Drs. Alpheus F. Jennings and Charles S. Kennedy, Detroit; Robert H. Denham, Grand Rapids; Clifford W. Brainard, Battle Creek, and attorneys Miles H. Knowles and Herbert V. Barbour, Detroit; G. Douglas Clapperton, Grand Rapids; Francis F. Shields, Howell, and Claude W. Coates, Sault Ste. Marie.

## MINNESOTA

**Dr. Maxcy Named Head of Department.**—Dr. Kenneth F. Maxcy, professor of preventive medicine and bacteriology, University of Virginia School of Medicine, Charlottesville, has been appointed professor of preventive medicine and public health and head of the department at the University of Minnesota School of Medicine. He succeeds Dr. Harold S. Diehl, who last year was appointed dean of the medical sciences. Dr. Maxcy graduated from Johns Hopkins University School of Medicine in 1915. He represented the U. S. Public Health Service at the malaria conference of the League of Nations in Geneva in 1928.

## MISSISSIPPI

**Society News.**—A motion picture on traumatic surgery formed the program of the Coahoma County Medical Society and the medical staff of the Clarksdale Hospital recently in Clarksdale.—The East Mississippi Medical Society was addressed in Meridian recently by Drs. Franklin G. Riley, Meridian, on "Pyelonephritis in Children," and Chalmers H. Moore, Birmingham, Ala., "Scope of Neurosurgery."—A paper by Dr. Archie E. Gordin, Jackson, on "Present Status of Gynecology Compared with Gynecology Twenty Years Ago" was read before the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg recently by Dr. Albert Gayden Ward, Jackson.—Dr. J. Rice Williams, Houston, discussed "Diagnosis and Treatment of Cancer" before a recent meeting of the Pontotoc County Medical Society.

## MISSOURI

**Dinner in Honor of Dr. Ewing.**—Dr. James Ewing, New York, was guest of honor at a dinner in St. Louis, recently, given by the board of directors and woman's auxiliary board of the Barnard Free Skin and Cancer Hospital. Dr. Ewing addressed the dinner meeting on "Responsibility of the Public in Cancer Service."

**State Medical Election.**—Dr. Dudley S. Conley, dean of the University of Missouri School of Medicine, Columbia, was chosen president of the Missouri State Medical Association at its recent annual meeting in Columbia, and Dr. Ross A. Woolsey, St. Louis, was installed as president. The next annual meeting will be held in Cape Girardeau.

**Society News.**—At a meeting of the Jackson County Medical Society, April 7, speakers were Drs. James Q. Chambers Jr. on "Geriatrics—Diseases of Old Age"; Radford F. Pittam, "Carotid Denervation in Cerebral Angiospasm," and Clarence E. Sanders, "Dynamics of the Circulation." All are from Kansas City.—Dr. Roy Glenwood Spurling, Louisville, discussed epilepsy at a meeting of the Kansas City Academy of Medicine recently.—At a meeting of the St. Louis Trudeau Club and the St. Louis Medical Society, April 7, Dr. Henry C. Sweany, Chicago, discussed "Pathogenesis of Pulmonary Tuberculosis."—Dr. Charles Macfie Campbell, Boston, addressed a joint

meeting of the St. Louis Medical Society and the Missouri Society for Mental Hygiene, May 3, on mental health.—The St. Louis Medical Society was addressed, March 17, by Drs. Roland M. Klemme on "Trigeminal Neuralgia—Accurate Differential Section"; Fred W. Bailey, "The Threat of Neglected Cholelithiasis," and Edward V. M. Mastin, "Shoulder and Clavicular Pain in Appendicitis."

**Conference of Social Work.**—Social and economic security was the theme of the meeting of the Kansas Conference of Social Work with the Missouri Association for Social Welfare at the Hotel Muehlebach, Kansas City, April 2-4. The speakers included:

- Dr. William J. Stewart, surgeon, state crippled children's service, University Hospitals, Columbia, Administration of the Social Security Law in Missouri.
- Dr. Paul J. Zentay, St. Louis, *The Social Worker and the Problem Child*.
- Dr. George Wilse Robinson Jr., Kansas City, *The Effects of the Depression on the Mental Life of the Child*.
- Dr. Ralph I. Canuteson, Lawrence, Kan., *The Tuberculosis Problem in Student Health Service*.
- James H. Scott, chairman, state board of administration, Topeka, Kan., *Cooperation of Private and Public Agencies with Parole, Probation and Prison Authorities*.
- Dr. Karl A. Menninger, Topeka, *Social and Economic Factors Relating to Personal and Family Life*.

## NEW YORK

**Study of Nutrition in Adult Life.**—A six year study of the rôle of diet in the last half of adult life will be undertaken at the New York State College of Agriculture at Cornell University, Ithaca, Dr. Livingston Farrand, president of Cornell, recently announced. The Rockefeller Foundation has given \$42,500 to support the study for six years. The new investigation was suggested by an observation that the diets which promote rapid growth in young rats were antagonistic to longevity and that the life span of the animals was increased by diets low in calories, diets the opposite of the optimal feeding for growth of the young.

**Academy Honors Dr. Potter.**—At the annual dinner of the Buffalo Academy of Medicine and the Medical Society of the County of Erie, April 3, the academy presented a gold medal to Dr. Irving W. Potter, who has practiced in Buffalo for forty-five years, thirty years as a specialist in obstetrics. Dr. Allen Jones made the presentation and brief addresses were made by Dr. James Herbert Donnelly, president of the academy, and Dr. Milton G. Potter, president of the county medical society and son of the guest of honor. The medal bears on its face an engraving of Dr. Potter and on the reverse side an inscription. Dr. Potter is a native of Buffalo and was graduated from the University of Buffalo School of Medicine in 1891.

**Supervision of Typhoid Carriers.**—Fifty new typhoid carriers were registered in upstate New York during 1935, exclusive of those in state institutions. Twenty-four were removed from the register, leaving 361 under supervision Dec. 31, 1935. Forty-one of the new carriers were discovered through investigation of sporadic cases of typhoid, six through the requirement of release cultures from cases of typhoid, two on evidence submitted by other health departments, and one through examination of bile obtained during an operation. Of those removed from the list, fifteen died, five were released after negative tests following cholecystectomy, and four moved outside the jurisdiction of the state department of health. Four per cent of the persons who were reported as having typhoid in 1934 and having recovered have been found to be chronic carriers, *Health News* reported. One outbreak of seven cases of typhoid was traced to a carrier during 1935.

## New York City

**Mental Status of Criminals.**—Of 2,590 offenders examined in the psychiatric clinic of the Court of General Sessions within the past year, less than 1 per cent were found to be definitely insane, according to a report by Drs. Walter Bromberg and Charles B. Thompson of the psychiatric division of the department of hospitals. Of that number 228 were classified as "immature adolescent"; 150 "weak-willed and suggestible"; 129 as "neurotic"; 162 as "unstable and impulsive" and 396 as "aggressively antisocial." Intelligence tests resulted as follows: 1,572, or about 60 per cent, average or low average intelligence; 220, intelligence above the average, and the remainder below. Mentally defective offenders numbered only fifty-seven. Native born persons made up 77 per cent of the total. Twenty-three per cent of the group were between 16 and 20 years of age.

**Report of the Diabetes Association.**—The New York Diabetes Association, which functions as a committee of the New York Tuberculosis and Health Association, has issued its

first annual report. The association has organized the following committees: internal medicine, surgery, statistics and department of health relations, lay education, lay committee, apparatus and the professions of nursing, social service and dietetics. Among the year's activities described are: a survey of diabetic clinics in the city, from which a directory was compiled; preparation of pamphlets on diabetes for physicians and laymen; studies of nostrums and apparatus; studies of diabetes incidence; investigation of the amount of insulin sold in the United States. A committee on podiatry has collected material relating to the care of the feet in diabetic persons and is now working toward specific recommendations on the subject. Arrangements have also been made for organization of a committee on dentistry.

**Personal.**—Dr. Marshall C. Balfour, representative in Greece of the International Health Board of the Rockefeller Foundation, has been awarded the silver medal for distinguished services by the Greek Academy of Sciences, Arts and Letters, in recognition of research in the field of malaria control in the Peloponnesus and in the Macedonian towns of Drama and Cavall.—Dr. Frank Fremont-Smith, until recently assistant professor of neuropathology, Harvard Medical School, Boston, has been appointed in charge of the medical division of the Josiah Macy Jr. Foundation.—Dr. Anna W. Williams, for many years assistant director of the laboratories of the New York City Department of Health, was presented with a testimonial scroll by the Women's Medical Society of New York State at its annual dinner, April 27, "in recognition of her forty years' service to New York City and work in advancing the cause of the woman doctor."—Dr. David Seegal has been appointed to fill the newly created position of director of the research division of chronic diseases in the city department of health.—Dr. Girolamo Bonaccolto has been appointed assistant professor of clinical ophthalmology at Columbia University College of Physicians and Surgeons.

## NORTH CAROLINA

**Personal.**—Dr. Isaac R. Wagner, head of the Veterans' Administration Facility at Memphis, Tenn., has been transferred to the facility at Oteen.

**Society News.**—Speakers at a meeting of the Mecklenburg County Medical Society, Charlotte, April 7, were Drs. Clyde C. Phillips, on "Irradiation Therapy in Uterine Bleeding from Causes Other than Cancer"; James R. Adams and George Preston Nowlin, "Atresia of the Vulva," and Edward J. Wannamaker Jr., "Insulin."

## OHIO

**Ten Year Diphtheria Record.**—A recent study of the occurrence of diphtheria in Ohio during the past ten years showed that an average of 61 cases per hundred thousand of population, a death rate of 4.4, had been reported. Twenty-one cities had no deaths from diphtheria during the period. Thirty-one had case or death rates higher than the average; these included the four largest cities, Cleveland, Cincinnati, Toledo and Columbus. Case rates were 98, 64, 53 and 81, respectively, for these cities, and the death rates were 8.5, 4.1, 4.7 and 3.8, respectively.

**Graduate Course at Youngstown.**—The Mahoning County Medical Society presented its ninth annual Post Graduate Day in Youngstown, April 30. The guest lecturers, all of New York, gave two lectures each during the day, as follows:

- Dr. Walter W. Palmer, *Thyroid Function and the Low Basal Metabolic Rate; Problems in the Medical and Surgical Treatment of Hyperthyroidism*.
- Dr. Dana W. Atchley, *The Nephrotic Syndrome; The Rôle of Peripheral Circulatory Failure in Medicine*.
- Dr. Allen O. Whipple, *Recent Advances in Surgery of the Pancreas; Medical and Surgical Treatment of Thrombocytopenic Purpura*.
- Dr. Alvan L. Barach, *Therapeutic Use of Helium in Asthma and Obstructive Lesions in the Larynx and Trachea; Recent Advances in Treatment of Pulmonary Edema, Cough and Dyspnea*.

**Health Projects in Social Security Program.**—The state director of health, Dr. Walter H. Hartung, has appointed an advisory council to assist in the administration of Ohio's program under the maternal and child health provisions of the social security act. It is expected that the program will be largely educational, including antepartum instruction to mothers and "refresher" courses in obstetrics and pediatrics for physicians. Members of the council are:

- Dr. John H. J. Upham, *President-Elect of the American Medical Association and dean, Ohio State University College of Medicine, Columbus*.
- Dr. Albert Graeme Mitchell, *professor of pediatrics, University of Cincinnati College of Medicine, Cincinnati*.
- Dr. Elmer G. Horton, *professor of pediatrics, Ohio State University College of Medicine, Columbus*.

Dr. Henry J. Gerstenberger, professor of pediatrics, Western Reserve University School of Medicine, Cleveland.  
Dr. Richard A. Bolt, director, Cleveland Child Health Association.  
Dr. Sterling H. Ashmun, Dayton, state chairman, American Academy of Pediatrics.  
Ewing V. Burns, D.D.S., Findlay, formerly president, Ohio State Dental Association.  
Dr. Willoughby D. Bishop, Greenville, secretary, Ohio Federation of Public Health Officials.  
Dr. Arthur J. Skeel, Cleveland, representing the Association of Obstetricians and Gynecologists.  
Dr. Walter W. Brand, Toledo, vice president, Hospital Obstetric Society of Ohio.  
Dr. Scott C. Runnels, Cleveland, representing the American Committee on Maternal Welfare.  
Mrs. Elizabeth T. August, R.N., Columbus, secretary, Ohio State Nurses' Association.

Funds available under this part of the act will amount to \$102,719.34 annually, according to the *Ohio State Medical Journal*. Under title VI of the act Ohio will receive \$285,100 this year for aid to local health districts. This part of the program will be under the direction of Dr. Reaves W. DeCrow, Columbus, chief of the bureau of health organization, state department of health. An application is pending for funds to enlarge the bureau of occupational diseases, which is directed by Dr. Emery R. Hayhurst, Columbus.

### SOUTH CAROLINA

**State Medical Election.**—Dr. Julius H. Taylor, Columbia, was chosen president-elect of the South Carolina Medical Association at the annual meeting in Greenville, and Dr. Robert C. Bruce, Greenville, was installed as president. Dr. Edgar A. Hines, Seneca, who has served as secretary for twenty-six years, was reelected. The next annual meeting will be held in Columbia.

### TENNESSEE

**State Medical Election.**—Dr. Wilson L. Williamson, Memphis, was chosen president of the Tennessee State Medical Association at its recent annual meeting in Memphis, succeeding Dr. John B. Steele, Chattanooga. Vice presidents are Drs. John E. Powers, Jackson; James O. Walker, Franklin, and Lee K. Gibson, Johnson City. Dr. Harrison H. Shoulders, Nashville, was reelected secretary. Knoxville was designated as the place for the next annual meeting, April 13-15, 1937.

**Society News.**—The following Memphis physicians addressed the Tri-County Medical Society (Carroll, Henry and Weakley counties), McKenzie, recently, as follows: Drs. Hubert K. Turley, on "Pyelitis of Pregnancy"; Frank W. Smythe, "Diagnosis of Intestinal Obstructions"; James B. Stanford, "Disease of the Eye," and Conley H. Sanford, "Modern Trends in Treatment of Lobar Pneumonia."—Drs. Arthur G. Quinn and Jerome P. Long Jr., Memphis, presented papers before the Memphis and Shelby County Medical Society, April 7, on "Classification of Diseases in the New-Born" and "Antepartum Hemorrhage" respectively.

### TEXAS

**Personal.**—Dr. John S. Cooper, Greenville, has been appointed city health officer to succeed Dr. Benjamin F. Arnold.—Dr. Charles D. Lipscomb, Quitman, was appointed health officer of Wood County, April 16.

**Society News.**—At a meeting of the Dallas County Medical Society, May 14, Drs. Charles W. Flynn and Hardy A. Kemp discussed "Problems in Gastric Surgery with Special Reference to Gastric Cancer" and "Certain Applications of the Bacteriology of the Brucella Group to the Clinical Problems of Brucellosis."

**Old Age Assistance Plan.**—The Social Security Board has approved the Texas old age assistance plan. Under this plan, which will go into effect June 1, it is estimated that 60,000 needy aged persons will be eligible for assistance and that the monthly cost will be about \$1,200,000 on the basis of an average monthly grant of \$20 per person. The program will be administered through the twenty district offices of the Texas Old Age Assistance Commission.

### VIRGINIA

**University News.**—Dr. Arnold R. Rich, Baltimore, gave the Alpha Omega Alpha Lecture at the University of Virginia Department of Medicine, recently, on "Immunity in Tuberculosis." Alfred Chanutin, Ph.D., professor of biochemistry, received the Edward N. Gibbs prize of the New York Academy of Medicine for the third consecutive year; the stipend is to be applied to research on diseases of the kidney.

**Personal.**—The board of managers of the Virginia Home for Incurables, Richmond, gave a reception in honor of Dr. Henry Ward Randolph, head of the medical staff of the

institution. He was presented with a large silver platter, in recognition of his more than twenty-five years' service with the hospital.—The staff of the Eastern State Hospital, Williamsburg, gave a reception in honor of the superintendent, Dr. George W. Brown, celebrating his twenty-fifth anniversary in that position.

### WASHINGTON

**Health at Tacoma.**—Telegraphic reports to the U. S. Department of Commerce for the week ended May 9 from eighty-six cities with a total population of 37 million indicate that the highest mortality rate (21.5) appears for Tacoma and that the rate for the group of cities as a whole is 12.6. For the corresponding period last year the rate was 12.4 for Tacoma and 12 for the group of cities. The annual rate for eighty-six cities for the nineteen weeks of 1936 was 13.5 as against a rate of 12.6 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, which show wide fluctuations. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

### WISCONSIN

**Medical Society Film.**—The Medical Society of Milwaukee County is preparing a motion picture film portraying all the activities of the society, under the direction of Dr. Herman A. Heise. The necessary equipment for the picture will be provided by members of the society.

**University News.**—Dr. John H. Skavlem, Cincinnati, addressed the University of Wisconsin Medical Society, March 31, on "Basic Points in Roentgen Ray Studies of Anatomy and Pathology of the Lung." Dr. Frank J. Hirschboeck, Duluth, Minn., spoke at the medical school convocation, recently, on "The Nervous Patient."

**William Snow Miller Lecture.**—Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, gave the ninth William Snow Miller Lecture at the University of Wisconsin, April 17. His subject was "A Neglected Chapter in the History of Anatomy Illustration and Instruction." The William Snow Miller Lectureship was established in 1928 by the Phi Beta Pi fraternity. It is given near the time of Dr. Miller's birthday, March 29.

**Society News.**—Speakers before the Medical Society of Milwaukee County, April 10, were Drs. Newell C. Gilbert, Chicago, on "Relation of the General Practitioner to Clinical Investigation"; James C. Sargent, Milwaukee, "Hydronephrosis: A Clinical Study of the Structural Involution That Follows Release of Obstruction," and John L. Yates, Milwaukee, "Cancer Cell Antigens: Their Practical Suggestions."—Dr. Palmer W. Good, Kenosha, addressed the Milwaukee Oto-Ophthalmic Society, March 10, on "Testing the Visual Acuity of the School Child." Dr. William E. Grove, Milwaukee, addressed the society, April 14, on "Septic and Aseptic Types of Cavernous Sinus Thrombosis."

**Federal Funds for Graduate Courses.**—Federal authorities have approved the use of funds released to the state board of health under the social security act to provide graduate courses in obstetrics and pediatrics for practicing physicians in Wisconsin. At a recent meeting of representatives of the state board of health, the State Medical Society of Wisconsin and the University of Wisconsin Medical School, two courses were tentatively outlined to begin about May 15 in circuits of five centers each. The instructional staff will be chosen from the faculty of the medical school. Funds have been made available only until June 30, but it is expected that appropriations will be made for continuation of this work during the next fiscal year.

### GENERAL

**Academy Exhibit.**—The American Academy of Ophthalmology and Otolaryngology announces that a scientific exhibit will be a part of its meeting in New York, September 26-October 3. Applications for space should be sent direct to Dr. Samuel J. Kopetzky, 51 West Seventy-Third Street, New York, for otolaryngology, and Dr. Ralph I. Lloyd, 14 Eighth Avenue, Brooklyn, for ophthalmology.

**Number of Defectives Sterilized.**—The Human Betterment Foundation recently reported that, up to January of this year, 23,092 insane and feeble-minded persons had been sterilized in the twenty-eight states having sterilization laws. More than 10,000 operations have been performed in California. Other states that had reported more than 1,000 sterilizations each were Kansas 1,509, Michigan 1,555, Minnesota 1,154, Oregon 1,047 and Virginia 2,386.



**Society News.**—The Pan-Pacific Surgical Congress will be held in Honolulu, August 6-14. An excursion has been planned to leave San Francisco July 31 and return August 22 to include the congress. Information may be obtained from Dr. George W. Swift, 902 Boren Avenue, Seattle, president of the congress. —Dr. Nathan C. Foot, New York, was elected president of the American Association of Pathologists and Bacteriologists in Boston, April 9; Dr. Earl B. McKinley, Washington, D. C., vice president, and Dr. Howard T. Karsner, Cleveland, secretary. The next annual meeting will be held at Northwestern University Medical School, Chicago, March 25-26, 1937.

**Automobile Accidents in Cities in 1935.**—Eighty-six cities with an estimated population of thirty-seven million reported 8,799 deaths from automobile accidents in 1935 as compared with 9,060 deaths in 1934, according to the bureau of the census of the U. S. Department of Commerce. Forty-eight of the eighty-six cities showed a decrease in the total number of fatalities from automobile accidents, thirty-six showed increases, and two cities reported the same number of deaths in 1935 as in 1934. Decreases are evident in fatality rates for Utica, N. Y., Salt Lake City, Lynn and Fall River, Mass., while increases are shown for Nashville, Tenn., Paterson, N. J., Youngstown, Ohio, Fort Wayne, Ind., and San Diego, Calif.

**Medical Bills in Congress.**—*Changes in Status:* S. 3334 has been reported to the House, providing for the care and treatment of members of the National Guard, Organized Reserves, Reserve Officers' Training Corps, and Citizens' Military Training Camps who are injured or contract disease while engaged in military training. S. 4390 has passed the Senate, providing that appointments to the Medical Administrative Corps shall be restricted to pharmacists who are graduates of recognized schools or colleges of pharmacy requiring four years of instruction for graduation, and further providing that the number of such pharmacists in the corps shall not exceed sixteen. *Bills Introduced:* S. 4627, introduced by Senator Barkley, Kentucky, proposes to create in the Bureau of the Public Health Service a Division of Stream Pollution Control.

**Changes in Status of Licensure.**—The Wisconsin State Board of Medical Examiners has reported the following action: Isaac Monroe Brown, whose last known address was New London, Wis., license revoked on reading of court records for performing of illegal operations.

The New Jersey Board of Medical Examiners has reported the following action:

Luis E. Viteri, Ambato, Ecuador, S. A., and Leslie F. Clary, Kings Park, licenses revoked recently for failure to present evidence of having become citizens of the United States.

The State Medical Board of Ohio reported the following action:

License of Elam L. Falvey, who took his medical course and received licenses to practice in Texas and Ohio under the name of Arthur L. Keyes, revoked January 7. His Texas license was revoked in 1935. Falvey was indicted in Ohio in October 1935 for filing with the state medical board a false affidavit of identity. At his trial in December he pleaded guilty and was sentenced to a year of probation, required to leave the state and to surrender his license.

The Board of Medical Examiners of Maryland announces the following action:

Dr. Thomas Statham Sheppard, Millville, N. J., license revoked. Dr. Sheppard's license to practice medicine in New Jersey was revoked March 27, 1935, for his conviction on a charge of criminal abortion.

The Colorado State Board of Registration in Medicine reports the following:

Dr. Lewis J. Greenfield, Denver, license revoked, April 7, for violation of the Harrison Narcotic Act.

The Oregon state board of medical examiners has recently reported the following action:

License of Dr. Walter R. Anderson, Portland, which was revoked in 1933, was reinstated April 1.

License of Dr. Isaac D. Bartell, Dallas, revoked January 17, for unprofessional conduct.

The Maine Board of Registration in Medicine announces the following action:

Dr. Joseph R. Woolf, March 10, Portland, license revoked because of his conviction of violation of the Harrison Narcotic Act and for fraudulent buying and dispensing of morphine.

**Committees to Study Silicosis.**—Four committees were appointed by Secretary Perkins, May 2, to work out a method for ending silicosis, the New York Times reported. Heads of the committees are Dr. Royd R. Sayers of the U. S. Public Health Service, who has been placed in charge of the medical committee; Warren A. Cook of the Connecticut State Department of Health, Hartford, of the engineering committee; V. P. Ahearn, Washington, D. C., economic, legal and insurance, and L. M. Metcalfe Walling, Providence, R. I., labor commissioner, in charge of the regulatory and administrative committee. Fifty-three men have been named to comprise the committees,

including health experts, representatives of employers, workers, insurance companies, government, technical societies and engineers. Their appointment grew out of a national conference held to discuss the problem.

**Expenditures by Cities for Health Services.**—The Bureau of the Census recently issued a compilation of financial statistics of cities showing the total amounts spent for health service, the per capita amounts and the percentages of the appropriations for all departments in 1934, 1933 and 1932. Among cities with populations over 500,000, Detroit had in 1934 a per capita for health purposes of \$1.89, the highest of the group. Others were Boston \$1.83, Buffalo \$1.64, New York \$1.53, Cleveland \$1.51 and Milwaukee \$1.46. In the next group of cities, between 300,000 and 500,000 population, the highest were Newark, N. J., \$2.63; Rochester, N. Y., \$2.04; Jersey City, N. J., \$1.92; Minneapolis, \$1.85, and Seattle, \$1.46. Among cities with populations between 100,000 and 300,000 the highest per capita expenditures for health were in Yonkers, N. Y., \$2.01; Worcester, Mass., \$1.95; New Bedford, Mass., \$1.74; Somerville, Mass., \$1.67; Trenton, N. J., and Providence, R. I., \$1.61.

## HAWAII

**Personal.**—Alvin R. Lamb, Ph.D., formerly of the U. S. Public Health Service and the Leprosy Investigation Station, Honolulu, has become research associate at the Experiment Station of the Hawaiian Sugar Planters' Association, Honolulu, according to *Science*.

**Lectures on Cancer.**—Dr. Max Cutler, director of the tumor clinic of Michael Reese Hospital and associate in surgery, Northwestern University Medical School, Chicago, began a series of twelve lectures on cancer, May 2, under the auspices of the Hawaiian Society for the Control of Cancer, Honolulu. Dr. Cutler also addressed the annual meeting of the Territorial Medical Association in Honolulu, May 2-4.

## FOREIGN

**Information Bureau in Paris.**—A "Bureau of Medical Relations with Foreign Countries" has been opened at the University of Paris, where physicians and students may obtain information they desire concerning graduate courses and hospital services. Foreign students and physicians are invited to communicate with the bureau on their arrival in Paris.

**Association for Protection of Humanity in War.**—At a conference in Monaco, February 10-12, called by the medicolegal commission created by the permanent committee of the International Congresses of Military Medicine and Pharmacy, there was formed the Association for the International Protection of Humanity. The new association, which will have headquarters in Monaco, will have two objects: first, to work to restrain the use of force in international relations and, failing that, to subject the use of force to rules of law in accord with knowledge; and, second, to foster the growing respect not only for life and security but for the liberty and the dignity of human beings. It plans to work in association with other international associations and institutions for diminution of the suffering caused by war. The president is Ernest Mahaim, former president of the International Labor Bureau, and the general secretaries are Dr. J. Voncken, director of the International Office of Military Medicine, Liège, Belgium, and Albert de la Pradelle, professor in the faculty of law at the University of Paris. Forty-seven persons representing thirteen countries attended the February meeting in Monaco. For information address Dr. Voncken, Quai de Plaisance, Monaco.

## Deaths in Other Countries

**Robert Bárány**, professor of diseases of the ear, nose and throat, University of Upsala, Sweden, and winner of the Nobel prize in medicine in 1914, died April 8, aged 60. Dr. Bárány was a native of Austria and was appointed to the faculty of the University of Vienna in 1909. During the World War he was made prisoner by the Russians but was later released, according to the *New York Times*. He went to Upsala in 1917. He received the Nobel prize for his studies on the interior structure of the ear.

## CORRECTION

**Units of Vitamin D.**—In a footnote in the article by Vrtiak and Lang entitled "Observations on the Treatment of Chronic Arthritis with Vitamin D" (*THE JOURNAL*, April 4, page 1162), it was stated that the viosterol preparation contained the equivalent of 850,000 units of vitamin D per gram. This is an error. The footnote should have read 1,000,000 units per gram.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 4, 1936.

#### Nutrition and National Health

Sir Robert McCarrison delivered to the Royal Society of Arts three lectures on nutrition and national health. He said that the greatest single factor in the acquisition and maintenance of good health is perfectly constituted food. The level of the physical efficiency of the Indian races was, above all else, a matter of diet. No other single factor—race, climate, endemic disease, and the like—had so profound an influence on their physique. The physique of the races of northern India was strikingly superior to that of the southern, eastern and western races. The former lived on whole wheat, milk and milk products, vegetables and fruit; the latter, largely on rice, and inferior cereals which were further reduced in nutrient value by parboiling, milling or polishing, and they had little milk or milk products. Experiments on a large number of albino rats with these two diets showed a similar contrast. On the former diet they thrived and disease was completely absent. But if the milk was left out or reduced, respiratory and gastro-intestinal diseases began to appear, especially if the consumption of fresh vegetables was also limited. Rats were fed on a diet common among the poorer classes of England—white bread, margarine, oversweetened tea with little milk, boiled cabbage and boiled potato, tinned meat and cheap jam. This diet has many faults of which vitamin and mineral deficiencies are the chief. The rats did not increase in weight; their coats were lacking in gloss. They were nervous. They lived unhappily together and by the sixtieth day began to eat the weaker members. The experiment was continued for 190 days, a period which would correspond to about sixteen years in man. The survivors were then killed. Disease of the lungs was twice as common as in the properly fed group. Gastric ulcer, warty outgrowths of epithelium in the stomach, gastritis, enteritis and colitis were very frequent, while they were absent in the properly fed. These ailments are frequent among the similarly fed English as well as among the poorer Madrassi. Peptic ulcer was very common in the south of India and rare in the north.

The conspicuous fault of the diet of the British people, according to McCarrison, is the extensive use of vitamin-poor wheat flour and the inordinate use of vitaminless sugar. This gave rise to insufficiency of vitamin B in the diet, unless it was supplemented with a sufficiency of milk, eggs, fruits, nuts and vegetables. Other deficiencies were in first-class proteins, calcium, iron and vitamins A and D. The result was many forms of ill health and a variety of inflammatory and degenerative diseases.

#### Presentation to Sir Almroth Wright

In the library of the inoculation department of St. Mary's Hospital Sir Henry Dale unveiled a portrait bust of Sir Almroth Wright and presented it to him with a small book containing the following engrossed address from 250 colleagues:

"On the attainment of your 75th year, we, your colleagues, pupils and friends, take the opportunity of offering you a token of our esteem and our warm personal affection. We wish to commemorate your outstanding work in immunology, your development of vaccine therapy, and your founding of the inoculation department of St. Mary's Hospital, where, so far as in us lies, your work shall continue. We would commemorate, in particular, that scientific humbleness of heart and that freshness of vision which have helped you in unveiling the tangles of contemporary medical thought and which, throughout your career, have been an inspiration to your fellow workers."

Sir Henry Dale referred to the contrast between the toll which typhoid took in the South African War and the experience of the much greater conflict two decades ago, when one weapon was put out of action by the application of Wright's work. His results had not been obtained by random shots but from the building of a fabric of ingenious theories which gave logical coherence to the observations made, until sometimes his friends feared that he might overtax the resources of the Greek lexicon in devising a nomenclature to give precision to his ideas.

In reply, Sir Almroth Wright said that when people said that work was pleasant his reply was that they had not worked at anything worth while. It might be great fun to work in a laboratory and get results, but it was no fun to work in a laboratory and fail to get results. If any one came to him proposing to do medical research he asked: Have you counted the cost? Do you know how much disappointment there is in that work, and how little satisfaction? The best reward of work was the praise of one's compeers.

#### Bill to Prevent Unscrupulous Advertising

The very moderate bill to prevent only the worst forms of unscrupulous advertising of alleged remedies, described in previous letters to *THE JOURNAL*, has been lost. Its second reading was moved in the house of commons by Mr. G. A. V. Duckworth, who said that its provisions were approved by representatives of the proprietary medicines trade, the Advertising Association, the County Council Association, the Pharmaceutical Society and many other bodies. It sought merely to remove some of the worst abuses in the advertisement and sale of patent medicines and secret remedies. The report of a select committee of the house of commons showed the volume and growth of the traffic in patent medicines and the inadequacy of the law to protect the public from fraud. It emphasized the dangers to the public in advertising claims to cure diabetes, cancer, tuberculosis and other diseases listed in the bill. The report stated that such advertising had grown to enormous proportions and that agencies had been established in which the unscrupulous could buy thousands of names of persons suffering from these diseases. Reputable newspapers had now established a voluntary form of censorship, which excluded the worst type of advertisement, but all newspapers were not so particular. The public were still exposed to great frauds. In comparison to the protection given by law in other countries, and particularly in the British dominions, it might well be said that the bill did not go half far enough.

In seconding the bill Capt. G. S. Elliston referred to the long campaign of *Truth* against unscrupulous quacks which gave rise to the select committee mentioned, and to the publication by the British Medical Association of "Secret Remedies," which showed the shameless exploitation of sufferers. Lord Bledisloe had said: "Probably never has such a tissue of fraud and falsehood been disclosed by any parliamentary committee." Its report was made in August 1914 and lay dormant during the war, but it produced important results, as many newspapers put into effect some of its recommendations. The bill was sorely needed and long overdue.

The rejection of the bill was moved by Sir Arnold Wilson, who said that it tended unduly to restrict the activities of the unorthodox practitioner. The house should pause before it accepted the assumption that most remedies and alleviations not approved by the medical profession were fraudulent. He had received testimony from men and women, known to him for many years, that unorthodox remedies had done them good. The rest of his long speech was, like this, irrelevant to the issue. He even complained that the bill did not touch the so-called cures for asthma, bronchitis, influenza and the common cold.

After further opposition the small number of members present led to a count, and it was found that forty members were not

present. The house was therefore "counted out" and the bill lost. Thus in the words of the *British Medical Journal*, "a very hard piece of public-spirited work came to a miserable end." This deplorable result can be partly attributed to the suspicion of a large section of the public that when the medical profession opposes irregular practices it is actuated by selfish motives. One speaker was afraid that the bill was "designed to safeguard the business of qualified doctors and chemists far more than the health of the public." Propaganda of the usual misleading type was carried on outside the house against the bill and pressure brought to bear on members. The idea of freedom in this very free country goes far beyond anything known on the European continent and ends in license. It includes toleration of antivaccinators, bone-setters and all kind of quacks and even, as in this instance, "cancer curers." However, a bill of this kind is certain to be passed sooner or later, probably as a government measure. If this bill had been brought forward by the government the "counting out" would not have been possible.

### Thirty Million Gas Masks

The elaborate preparations for the protection of the civil population against attacks with poison gas, which are being announced from time to time, are a sad reflection on our boasted civilization. The latest are plans to train 77,000 members of the St. John Ambulance Brigade in antigas work. In this the Air Raids Precautions Department of the government will assist. Some thousands of men have already been trained and it is proposed to train women. The public baths in London may be used as decontaminating centers. It is also proposed to supply antigas containers for babies in the event of war. Work on the mass production of 30,000,000 gas masks, which will be distributed free in the event of war, has been started. Their design has been approved by the government. They will cost about 50 cents each. Although considered only the second line of defense, sealed doors and windows being the first, the mask will resist the heaviest concentration of gas for a quarter of an hour and normal gas conditions for four or five hours. Rapid progress is being made in setting up local air raid precautions committees. During the coming year 600 police and fire department officers will be trained as instructors at the new Civilian Gas School near Gloucester.

### Sir Archibald Garrod

Sir Archibald Garrod, the distinguished physician and chemical pathologist, has died at the age of 78 years. The son of a distinguished physician, Sir Alfred Garrod, he was educated at Oxford and St. Bartholomew's Hospital, to which he became physician. In 1890 he published "A Treatise on Rheumatism and Rheumatoid Arthritis," in which the distinction between the two diseases was first laid down. He directed his attention mainly to disease in its chemical aspects. In Batten and Thurstfield's "Diseases of Children by Various Authors" he contributed the articles on "Disease as It Affects Children" and "Diseases of the Ductless Glands and of Metabolism." In 1900 he delivered the Bradshaw lecture at the Royal College of Physicians on "Urinary Pigments in Their Pathological Aspects." The subject of his Croonian lecture was "Inborn Errors of Metabolism," which was published in book form in 1909. Much of his original work on chemical pathology was delivered in lectures on congenital steatorrhea, alkaptonuria, cystinuria and diaminuria and haematomporphyria congenita. He contributed articles on arthritis to Allbutt's "System of Medicine." He was for twenty years one of the editors of the *Quarterly Journal of Medicine*. His last important work, "The Inborn Factors in Disease," was published in 1931. On the death of Osler he became his successor as regius professor of medicine at Oxford. He had the great misfortune of losing his three sons in the war.

## PARIS

(From Our Regular Correspondent)

April 18, 1936

### Newer Aspects of Intestinal Infarcts

A case was reported in 1935 by a well known surgeon of Paris, Prof. Raymond Grégoire, in which a preoperative diagnosis of thrombosis of the mesenteric vessels had been made. The patient's condition did not justify an attempt to resect the coil of small intestine, which appeared to be the seat of the thrombosis. To improve the patient's condition, epinephrine was given subcutaneously in the thigh. Almost immediately the exposed intestine began to resume its normal color and luster. The abdomen was closed and the patient recovered. This led to an active discussion at the time Grégoire reported the case as to whether a condition resembling clinically a mesenteric thrombosis could be due to vascular spasm or to some form of anaphylactic shock. At the Nov. 6, 1935, meeting of the Société Nationale de Chirurgie, Grégoire and Couvelaire reported some experiments on visceral infarcts. Quite recently, Dufau added a clinical case of infarct of the small intestine cured by antishock medication. The latter report was made at the Jan. 22, 1936, meeting of the Académie de Chirurgie.

Grégoire and Couvelaire stated that in their opinion a hemorrhagic pancreatitis, intestinal infarct, thrombosis of the testis and uterotubo-ovarian apoplexy have always been regarded as independent lesions. This is probably true of cases in which an obliteration of the nutrient vessels of the viscus existed. But one encounters cases in which no such vascular obstruction can be found, especially in the intestine, in hemorrhagic pancreatitis and in uterotubo-ovarian apoplexy.

Experimentally these various accidents can be caused by a toxemia of the vegetative nervous system, by an endogenous or exogenous poison in the form of an anaphylactic shock. Clinically all the lesions just cited resemble one another by the sudden onset with generalized symptoms, the leading one of which is marked fall in blood pressure. Anatomically, the thirty-two experiments on dogs and guinea-pigs were characterized by a sudden arrest of circulation accompanied by dilatation of the blood vessels and extravasation of blood. This can be temporary or permanent, the circulatory disturbances varying from simple apoplexy to an anemic necrosis. All of Grégoire and Couvelaire's experiments were accomplished by sensitizing the animal with a heterogenous serum (horse). Three weeks later an injection was made at the level of the viscus (pancreas, intestine, uterus or testis) one wished to study. All the experiments were made under local anesthesia.

Following the second injection, the same severe generalized symptoms are observed as are encountered clinically. These are followed by congestion and diffuse hemorrhagic extravasation as in hemorrhagic pancreatitis, intestinal infarct, uterotubo-ovarian apoplexy and testicular thrombosis. The deduction can be made that such lesions, at least in animals, are due to a shock of intolerance or anaphylactic shock. Other investigators were cited as obtaining the same results with other exogenous substances.

As to treatment, if the surgeon observes that the circulation in the viscus, especially of the intestine, reappears after antishock medication, the abdomen can be closed and the same treatment continued. If, however, the viscus presents evidence of incipient necrosis, more radical measures are indicated. If there is a doubt as to the condition of a coil of intestine, it can be exteriorized and resected later. Several successful cases of this kind have been reported recently.

The cases reported by Dufau appear to be a clinical confirmation of the previous observation of Grégoire and of his present experimental work.

A man aged 45 presented the clinical picture of an intestinal infarct. At operation, this condition was found over a length of 80 cm. There was only slight mesenteric infiltration and the arterial pulsation appeared good. Epinephrine was given subcutaneously and also warm serum. The exposed coil regained its normal appearance rapidly and was replaced. An uneventful recovery followed.

### Injuries of the Ureter During Hysterectomy

At the March 11 meeting of the Académie de Chirurgie of Paris, Roger Petit reported twenty cases of kinks, deviation of the course, and stricture as sequelae of hysterectomy. Many of these patients do not consult the surgeon until some time after the intervention, the interval varying from a few months to several years.

In most cases, the chief complaint is pain, both spontaneous and elicited on palpation of the kidney. The pain is usually referred to the lumbar region and often recurs in paroxysmal form with or without a febrile reaction. As a rule pus and bacteria (most commonly *Bacillus coli*) are found in the urine.

During the past four years twenty cases have been encountered. In three cases, the preceding operation had been unilateral salpingectomy for extra-uterine pregnancy, thirteen followed subtotal hysterectomy (three for fibroids and ten for adnexal disease), while four followed complete hysterectomy (two for fibroids and two for adnexal disease).

The methods of diagnosis are by the passage of ureteral catheters or bougies supplemented by ascending ureteropyelography. One should not expect to find very marked changes in the ureter or renal pelvis. At the period in which the pain is first complained of, only a slight degree of dilatation of the ureter or renal pelvis (small hydronephroses), or both, is to be found.

On ureteral exploration with the catheter or bougie, an obstruction is encountered at a level of 4 cm. from the vesical orifice of the ureter. Most commonly this resistance is found at a level of from 8 to 10 cm. Following the passage of the catheter beyond the obstructed area, urine varying in amount from 8 to 30 cc. escapes through the catheter. With the aid of retrograde ureteropyelography, preferably with the use of the Chevassu catheter, an accurate picture of the strictured area, kink or displacement of the pelvic ureter, and dilated portions above, can be obtained. It is unusual for the ureteral disorder to be found at the level of crossing of the ureter by the uterine artery; i. e., 4 cm. up. Most frequently, the level at which the ureteral changes are found is from 8 to 10 cm. up; i. e., at the level of the ovarian pedicle where the ureter is in very close contact with the peritoneum. The ureter can be injured in one or more of three ways: (a) when the ovarian pedicle is ligated too near the pelvic wall, (b) when in covering the hysterectomy stump with peritoneum too much subjacent tissue is included in the suture, and (c) in pulling on the peritoneum too forcibly in the attempt to cover the stump. The peristaltic movements of the ureter are interfered with, resulting in local atony and resultant changes in the ureteral wall and peri-ureteral envelopes. The treatment consists chiefly in dilatation of the strictured area with bougies of gradually increasing caliber followed by lavage of the renal pelvis.

In the discussion, Chevassu stated that he was not convinced, by the films shown by Petit of the presence of an obstruction at the level of the brim of the pelvis, where the ovarian pedicle would be ligated. Quite frequently a fusiform dilatation could be observed in nonoperated women, which began at the point of union of the pelvic and iliac portions of the ureter and extended almost to the kidney. A slight obstruction in the pelvic portion of the ureter sufficed to cause a marked accentuation of such a fusiform dilatation. Gouverneur emphasized the importance of the interference with peristalsis due to too extensive denudation of the ureter during operations.

### Warning Against Vaccination in Infantile Paralysis

At the March 10 meeting of the Académie de Médecine of Paris, Levaditi and his co-workers stated that active immunity in poliomyelitis can be obtained only by the production of an occult infection capable of a vaccination of the nerve centers against the ultravirus. The receptivity of monkeys and especially of human beings to the ultravirus is subject to inexplicable variations, hence the danger of using a living virus whose degree of attenuation cannot be estimated in advance on individuals whose receptivity varies so greatly. Certain persons will be immunized while others are infected.

Experimental study by Levaditi and his co-workers of Kolmer and Rule's vaccine shows that it has a prophylactic action, but this is found in only a very small percentage of animals. The observations published in 1935 by Leake of the United States Public Health Service were cited as showing that the utmost care must be observed in advising vaccination in human beings, because of the imperfect state of the present knowledge of the subject.

### BERLIN

(From Our Regular Correspondent)

April 1, 1936.

### A System of Personal Health-Albums

For some time the public health headquarters of the directorate of the National Socialist Party has been planning to inaugurate a system of personal health-albums, based on physical examinations according to age groups, which eventually would include the entire population of the reich (*THE JOURNAL*, April 13, 1935, p. 1351). By examinations at intervals not to exceed two years, these albums will be kept up to date. A beginning will be made shortly with two age classes from the German Workers Front, an organization which, as every one knows, has taken the place of the trade unions. The German social insurance organization will administer and finance this undertaking. The primary concern will be not so much the singling out of sick persons as the determination of persons considered well. The examination will first attempt to ascertain the functional working capacity and next to make the person's health and working capacity conform to the maximum indicated by hereditary aptitudes. The albums will contain not only a record of defects; positive hereditary factors are also to be stressed as well as data on maximum capability and the means by which it may best be achieved. The headquarters stipulates three classifications of bodily form: slender, muscular and rotund. Persons shall be classed as agile, sluggish, matter of fact, sensitive, hypocritical and so on. Each album contains a family tree in which the hereditary background can be studied. There are three differing types of examinations based on age groups: health blank A for nurslings and children under the age of 6 years; B for the group between the ages of 6 and 18; C from ages 19 to 65. Separate examinations are given for males and females within these groups. The books will remain with the local administrative units of the public health headquarters. When a registrant changes his residence, the album is transferred to the station nearest the new domicile. These records will be placed at the disposal of party and service bureaus only in special circumstances (and under seal of medical professional secrecy). These examinations, in which the racial political bureau of the party will cooperate, are not designed to deprive persons of their employment but to place those suffering from minor disabilities in more suitable occupational fields.

### The Meinicke Test for Tuberculosis

The flocculation test devised by Meinicke some years ago has come to be regarded seriously. Experimentation, however, has not yet been sufficiently extensive. It is important that

the value of this test be demonstrated with clinical material of the general hospital instead of confining its use to tuberculosis stations. Professor Kalk has undertaken such an investigation. The reaction can be established with serum as well as with pleural exudate and even with cadaveric blood. The most important finding is that a single negative result tells nothing; the test must be repeated at regular intervals. Clinically ascertained cases of pulmonary tuberculosis showed 80 per cent positive, or 98 per cent if doubtful cases are included. Control examinations of thirty-five healthy aviators showed only three doubtful cases with positive reactions, the others showing repeated negative reactions. The reactions of the hospital personnel and those of relatives of tuberculous patients were similar. Only 26 per cent showed unequivocal negative reactions. Here, from the nature of the Meinicke test as a true antigen-antibody reaction, the much disputed theory of immunity to tuberculosis by increased exposure suggests itself.

Among hospital patients generally the positive tests indicate mostly an old tuberculous condition with the exception of patients with diabetes, in whom a remarkable accumulation of positive reactions (30 per cent) and doubtful reactions (55 per cent) was observed. Perhaps this should be considered as a manifestation of increased susceptibility to tuberculosis among diabetic patients.

Negative reaction to repeated examinations demonstrates the absence of tuberculosis as reliably as the positive reaction demonstrates the presence of the disease. The doubtful reaction is especially significant if in the course of the illness it changes to a positive. According to Kalk, this test should today belong to the routine of every large hospital.

Of the patients with severe forms of tuberculosis, 36 per cent showed negative reactions to the initial test; but as their condition improved the reaction became positive. This change is regarded as prognostic. On the contrary, fatal cases, for example, often showed negative reactions because of deficiency of antibodies. The weakening of the positive reaction corresponds most particularly to the appearance of exudates. Enfeeblement of a previously strong reaction may be taken to indicate deterioration, convalescence or appearance of exudates. The test is useful only in connection with the clinical course of the disease. The test can be considered as a true antigen-antibody reaction.

As Dr. Meinicke himself emphasizes, thorough roentgen examination is still the choice procedure. For the clinic, however, the Meinicke reaction appears to have taken its place beside the erythrocyte sedimentation reaction and the curve of bodily weight as a useful diagnostic and prognostic aid.

#### Death of Prof. Friedrich Kraus

Prof. Friedrich Kraus, prominent Berlin internist, died March 2, aged 78. Born in the German-Bohemian border region in what is now Czechoslovakia, Kraus studied at Prague, receiving his foundation in biochemistry from Hofmeister and in pathologic anatomy from Hering. In 1889 he became assistant to Kahler at Vienna and as early as 1894 he was called to Graz as an internist to head the university's medical clinic. In 1902 he succeeded Gerhardt in Berlin as the head of the second medical clinic of the university (the Charité).

The painstaking efforts of Kraus to explain constitution and individuality by means of systematic analysis and synthesis were an innovation; his monograph "Fatigue as a Measure of the Constitution" worked a revolution in the world of medical thought. He established the cortical person as opposed to the "tiefen person" (inner person). He contributed to a better understanding of internal medicine in all its ramifications. His vast knowledge permitted him to have unusual slants on many subjects. Many of his attitudes are incomprehensible and perhaps are destined to remain so. His lectures were not easy to

follow; nevertheless doctors came in throngs when it was announced that he would speak. A spell that seemed to emanate from his personality gripped his hearers. His researches on the electrocardiogram were fundamental; his manual "Special Pathology and Therapy of Internal Disorders," written in collaboration with Brugsch, contributed to the profession's practical knowledge in this field. Kraus served for many years as president of the Berlin Medical Society by the acclaim of the membership, who reelected him again and again, although conscious of his foibles. When at the age of 70 he came to make his farewell address, the great auditorium was unable to hold all those who sought admittance, and on that occasion he discoursed in a wholly unintelligible vein. It may be that his prodigious mind placed him in advance of his time. Kraus knew how to stimulate thought. His manner while lecturing was always unassuming, although he frequently was so overwhelmed by the profundity of his ideas that he would digress from the announced topic of his discourse.

#### BUCHAREST

(From Our Regular Correspondent)

April 3, 1936.

#### Graduate Teaching in Rumania

Graduate medical teaching is primarily national in Rumania and it has not been organized as yet by the state. To meet the requirements of country doctors, the ministry of public health in conjunction with the ministry of public instruction resolved to arrange courses in Jassy, Galatz, Craiova, Cluj, Brasov, Oradea and Bucharest. Doctors who cannot afford to take the courses and cannot get the funds will be provided with free board in the Physicians House in Bucharest, and others will get board at a much reduced rate. The central committee also makes daily allowances in certain cases. For those holding official positions the committee is endeavoring to get leave for the duration of the courses, which are to be entirely free except for the registration fee of \$1.50. The courses last respectively two weeks and a month. Some of the Bucharest clinics give tuition to graduates during the whole of the academic year. The courses to be held this year will be in maternal and child welfare and in first aid to injured persons. A special feature will be courses in the economical management of public health institutions, for medical superintendents. The subjects dealt with will include hospital construction, equipment and management, medical technic, institutional feeding and laundry work.

#### Physicians in Public Service

The new law reorganizing public medical service distinguishes five groups of physicians, according to whether they are concerned with public hygiene, healing, laboratory work, administration in cities and parishes, or forensic medicine. Specialists in any branch of medicine must produce evidence of having studied their branch for at least four years after graduation. The law recognizes as specialists those who, before its proclamation, were university professors, lecturers, assistants or senior hospital physicians, or worked as secondary doctors in a special section of a recognized hospital. Private physicians will be recognized as specialists only if they can supply documentary evidence of having worked in their specialty for at least four years.

In the public service the following ranks are established: junior physician, titular physician, physician-in-chief, principal physician, inspector-general physician and consulting physician. As a rule, every one must begin his public career as a junior physician and must spend two years in this capacity. Advancement is not a certainty but takes place according to merit. One must, however, spend at least two years as junior and

four years as titular physician. The rank of inspector-general is reserved for the most prominent doctors and appointment is subject to the recommendation of a special commission. Their total number cannot exceed twenty-four in the whole country. If an inspector-general has shown a particularly useful and conscientious activity he receives on retirement the title of medic consilier sanitar. The old law recognized four grades, each promotion providing a 15 per cent rise in salary. The new law is more liberal and provides five grades, each with 25 per cent rise, and the total increase of 125 per cent, together with several additional sources of income, ensures a comfortable living. At the age of 60 every physician may be pensioned at the suggestion of the commission. At 62 all must retire without regard to years of service.

### Sued for Professional Indiscretion

At a thermal bathing resort near Oradea, an industrial town, a venereal specialist was sitting in a common bath, when he saw that a patient of his, who on the day before consulted him for the treatment of scabies, wanted to enter. The doctor stepped out of the water and advised the patient to go to a private bath. In his present state the patient was a menace to all who were in the water. The patient refused to do so, and the doctor threatened to call the bath servant to remove him. The patient was obdurate and the doctor called the bath servant and told him to eject the obstinate person, who later brought legal action against the doctor for professional indiscretion, arguing that when he wanted to enter into the common bath he was cured of his scabies. The doctor stated that he did not make known at the time the cause for the removal of the man. He was the official doctor of the bath, and it was impossible that he would have had been totally cured of his scabies for which he consulted him only one day before. The doctor was acquitted and the man in question was fined 1,000 lei for attempting to enter a common bath with a contagious disease.

### MOSCOW

(From Our Regular Correspondent)

March 12, 1936.

### The Death of Professor Pavlov

The medical world mourns the death of the physiologist Ivan Petrovitch Pavlov, February 27, of influenza, with which he was ill only a few days. Professor Pavlov was born at Ryazan, Sept. 27, 1849, the son of a priest. After his early education in a seminary he attended in 1870 the faculty of natural sciences at St. Petersburg and began his study of physiology. In 1874 he published his first work, on innervation of the pancreas, which was awarded a gold medal. After graduating at the university he entered the third course of the Military Medical Academy, simultaneously working as assistant to Professor Zion. In 1877, under Professor Heidenhain, he studied the physiology of the gastro-intestinal tract. After graduating from the academy in 1879 he received the M.D. degree for his work on centripetal heart nerves. He worked five years in Germany with Ludwig and Heidenhain (1884-1886) and published several papers, on the pancreatic juice, salivation in sham feeding and other subjects. He was elected in 1890 professor of the Tomsk (Siberia) University but the appointment was not confirmed by the government. In the same year he was given the chair of pharmacology in the University of Warsaw and in the Military Medical Academy in St. Petersburg; the latter he occupied till 1924. In 1897 Professor Pavlov summarized the result of his works in the monograph "Lectures on the Digestive Glands." He was awarded for these researches the Nobel prize in 1904. In 1906 he was elected a member of the Russian Academy of Science. In 1903 at the meeting of the International Congress of

Physiologists in Madrid he read his paper on experimental psychology of animals, which became the basis of a new chapter in physiology. In his two books "Twenty Years' Experience in Experimental Study of the Nervous Reactions of Animals" and "Lectures on the Work of the Cerebral Hemispheres" he gave a complete systematic statement of the theory of conditioned reflexes. The soviet government helped in his work. His laboratories in Coltuschi were erected along Pavlov's own ideas. Till his last days he was head of the Institute of Physiology and Pathology of Higher Nervous Activity, the Department of Physiology of the All-Union Institute of Experimental Medicine and the biologic station at Coltuschi.

In 1935 Pavlov was chosen president of the fifteenth International Congress of Physiologists; in the autumn of 1935 he read a paper at the international meeting of neurologists in London. In one of the central squares of Leningrad there will be erected his monument. The First Leningrad Medical Institute received Pavlov's name. The Academy of Science of the Union of Socialist Soviet Republics will publish all his works in Russian, French, English and German. The brain of the celebrated scientist is conserved in the Moscow Brain Institute, where it will be thoroughly studied. Pavlov's laboratory at Leningrad will be left as a museum. His wife receives a pension of 1,000 rubles a month. The funeral of Pavlov, at government expense, was a true demonstration of the peoples' sorrow. Thousands were present. His family received telegrams and letters from all over the world and from all leaders in our country.

### The Endocrinology Institute

The State Institute of Experimental Endocrinology was established at Moscow about ten years ago and is working now under the leadership of Prof. Nicholas A. Shereshevskiy. It studies theoretical and clinical problems. The institute has departments of biomorphology, biochemistry and physiology, a clinic for endocrine disorders and a department which standardizes all glandular preparations manufactured here. Without its sanction no endocrine preparation can be used in the Soviet Union. The chief subjects now being studied are at present obesity, cachexia, premature sexual development and exophthalmic goiter. In the clinic are studied the newest methods of treatment of glandular diseases. The institute publishes the monthly journal *Problems of Endocrinology*. This institute is the center for the study of endocrinology in this country. A special new building will be erected for the institute within the next few years.

### Prizes for Best Works on Rheumatism

The international committee awarding prizes for the best works on rheumatism had its meeting at Moscow, Dec. 16, 1935. Professor Intvar of Lund, Sweden, Professor van Breemen of the Netherlands, Prof. Maximilian P. Conchalovsky and Prof. G. M. Danichevsky of Moscow were present. Forty-two scientific works, were reviewed. The prize of \$10,000 was divided in equal parts among Professor Calniere of Stockholm, P. Wayle of Paris, Schlesinger of London and Freinhd of Vienna.

### The Death of Prof. S. P. Fedorov

Prof. Serge Petrovitch Fedorov, one of the leading surgeons, has died in Leningrad from cancer of the rectum. When 26 years of age he received the doctor of medicine degree; at 34 he was chosen professor of surgery in the Leningrad Military Medical Academy, which position he held for nearly forty years. His principal studies were on surgery of the bile tract and gastro-enterology. Professor Fedorov was a brilliant operator and the author of about 120 scientific works. He was the president of the Leningrad surgical society.

## Marriages

WILLIAM LENEAVE BERKLEY, lieutenant (j. g.) M. C., U. S. Navy, to Miss Charlotte Hamilton Priest, in Washington, D. C., April 11.

LYNN JAMES LULL to Miss Gladys M. Sullivan, both of Olathe, Colo., at Grand Junction, Colo., April 1.

WILLIAM C. HUTCHISON to Miss Elizabeth Agnes Wargo, both of McKeesport, Pa., May 9.

ANTHONY E. REYMONT to Miss Elizabeth Elich, both of Chicago, April 25.

ABRAHAM COHEN to Miss Lillian Davidow, both of Reading, Pa., May 10.

## Deaths

Roger Griswold Perkins ☉ Wakefield, R. I.; Johns Hopkins University School of Medicine, Baltimore, 1898; member of the Ohio State Medical Association; professor emeritus, hygiene and preventive medicine, Western Reserve University School of Medicine, Cleveland, lecturer on bacteriology, 1901-1904, assistant professor of pathology and bacteriology, 1904-1908, associate professor of pathology and hygiene, 1908-1911, and professor of hygiene and preventive medicine, 1911-1930; city bacteriologist in Cleveland, 1906-1907, 1913-1914; chief of the bureau of laboratories of the city division of health, 1914-1923; consultant to the commissioner of health and director of the laboratories, 1923-1930; chairman of the Cleveland Health Council, 1925-1929; trustee of the Brush Foundation, Cleveland; member of the American Red Cross Commission to Rumania, 1917-1918; medical associate to the scientific attaché of the American Embassy in Paris in 1918; director of the sanitation division of the American Red Cross Commission to the Balkan States in 1919; aged 61; died, March 28, in the Rhode Island Hospital, Providence, of pulmonary embolus, following transurethral resection of the prostate.

Rufus Bartlett Hall, Cincinnati; Miami Medical College, Cincinnati, 1872; professor emeritus of gynecology, University of Cincinnati College of Medicine; member of the Southern Surgical Association; past president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Ohio State Medical Association and the Cincinnati Academy of Medicine; member of the House of Delegates of the American Medical Association from 1908 to 1909 and in 1919; fellow of the American College of Surgeons; formerly on the staff of the Cincinnati General Hospital; one of the organizers of the Presbyterian Hospital; aged 86; died, April 3.

Camille Alphonse H. Fortier ☉ Milwaukee; Milwaukee Medical College, 1911; formerly lecturer on radiology, Marquette Dental College and Marquette University School of Medicine; served during the World War; at various times on the staffs of the Johnston Emergency Hospital, Milwaukee County Hospital, Evangelical Deaconess Hospital, Maternity and General Hospital, St. Luke's Hospital and St. Joseph's Hospital, Milwaukee, St. Mary's Hospital and St. Luke's Hospital, Racine, and roentgenologist to the Memorial Hospital, Burlington, Wis.; aged 59; died, March 7, of cerebral hemorrhage.

Evan Thomas Steadman ☉ Montclair, N. J.; University of the City of New York Medical Department, 1885; past president of the Hudson County Medical Society; fellow of the American College of Surgeons; on the staffs of St. Mary's Hospital, Hoboken, Christ Hospital and Margaret Hague Hospital, Jersey City, and the North Hudson Hospital, Weehawken; consultant physician to the Mountainside Hospital; aged 74; died, March 28, of arteriosclerosis.

John King Adams ☉ East Orange, N. J.; Columbia University College of Physicians and Surgeons, New York, 1902; fellow of the American College of Surgeons; served during the World War; attending surgeon to the Hospital and Home for Crippled Children, Newark; attending orthopedist to St. Mary's Hospital, Orange, and the Dover (N. J.) General Hospital; aged 58; died, March 27, in the Mountainside Hospital, Montclair, of aortic insufficiency.

Charles Edward Vail, Miraj, India; Columbia University College of Physicians and Surgeons, New York, 1906; fellow of the American College of Surgeons; for twenty-six years a medical missionary; professor of surgery and obstetrics, Miraj Medical School; physician in charge of the American Presbyterian Mission Hospital; aged 56; died, March 21, of abdominal carcinoma.

John Abner Snell, Soochow, China; Vanderbilt University School of Medicine, Nashville, Tenn., 1908; fellow of the American College of Surgeons; for many years a medical missionary; superintendent of the Soochow Hospital; member of the Council on Hospitals of the China Medical Association; aged 55; died, March 2, of pneumonia, following influenza.

Charles Williams Crane ☉ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1898; professor of clinical surgery at his alma mater; fellow of the American College of Surgeons; formerly medical director and chief surgeon of the Margaret Wright Hospital; attending surgeon to the Wilberford and University hospitals; aged 61; died, April 1.

Emery Austin Miller, Brooklyn; Eclectic Medical College of the City of New York, 1891; College of Physicians and Surgeons, Baltimore, 1894; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1895; aged 68; died, February 8, in the Kings County Hospital, of arteriosclerotic heart disease and diabetes mellitus.

Charles Arthur Baragar, Edmonton, Alta., Canada; Manitoba Medical College, Winnipeg, 1914; member of the American Psychiatric Association; clinical professor of psychiatry, University of Alberta Faculty of Medicine; commissioner of mental institutions and director of mental health, department of public health; aged 50; died, March 8, of pneumonia.

Willis Hanford Crowe ☉ New Haven, Conn.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1895; fellow of the American College of Surgeons; attending surgeon to the Hospital of St. Raphael and consulting surgeon to the Grace Hospital; aged 62; died, March 24, of coronary occlusion and chronic nephritis.

Herbert Daniel Kistler ☉ Butte, Mont.; St. Louis University School of Medicine, 1905; past secretary of the Montana State Medical Association; fellow of the American College of Surgeons; president of the Murray Hospital and Murray Hospital Clinic; aged 59; died, March 29, in Lovelock, Nev., of injuries received in an automobile accident.

Frank Doig Francis ☉ Major, U. S. Army, retired, Tampa, Fla.; Northwestern University Medical School, Chicago, 1903; served during the World War; entered the medical corps of the regular army as a major in 1920 and retired in 1932 for disability in line of duty; aged 57; died, April 5, of cerebral hemorrhage, arteriosclerosis and nephritis.

George Edward Webb Hardy Jr. ☉ Tampa, Fla.; Johns Hopkins University School of Medicine, Baltimore, 1917; served during the World War; fellow of the American College of Surgeons; member of the surgical staffs of the Tampa Municipal Hospital and St. Joseph's Hospital; aged 43; died, March 26, of cerebral and coronary thrombosis.

Joseph L. McDermott ☉ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1907; clinical professor of radiology at his alma mater; member of the Radiological Society of North America; aged 60; past president and on the staff of St. Joseph Hospital, where he died, March 6, of a hemolytic streptococcus infection.

William Harry Bergtold, Denver; University of Buffalo School of Medicine, 1887; member of the American Climatological Association; professor of pathology at the University of Denver, 1897-1900; served during the World War; since 1900 member of the staff of St. Joseph's Hospital; aged 70; died, March 19.

George Edward Clark, Providence, R. I.; University of Maryland School of Medicine, Baltimore, 1889; member of the American Psychiatric Association and the New England Society of Psychiatry; aged 72; on the staff of the Butler Hospital, where he died, March 14, of cerebral thrombosis and pulmonary tuberculosis.

Paul Christopher Geissler, Tulsa, Okla.; University of Nebraska College of Medicine, Omaha, 1916; member of the Associated Anesthetists of the United States and Canada; served during the World War; aged 46; on the staffs of St. John's Hospital and the Morningside Hospital, where he died, March 16.

Frank Sherwood Meade ☉ Madison, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; member of the Radiological Society of North America; aged 53; died, March 1, in the Madison General Hospital, of arteriosclerosis and chronic nephritis.

Frederick Danforth McAllister ☉ Lawrence, Mass.; Harvard University Medical School, Boston, 1898; fellow of the American College of Surgeons; aged 63; visiting surgeon to the Lawrence General Hospital, where he died, March 17, following an operation for acute gangrenous cholecystitis.



**Henry Edwin Morrison**, San Jose, Calif.; Cooper Medical College, San Francisco, 1897; member of the Associated Anesthetists of the United States and Canada; served during the World War; at one time superintendent of the Sacramento (Calif.) Hospital; aged 66; died, March 24.

**Harry Otis Johnson**, Machias, Maine; University of Maryland School of Medicine, Baltimore, 1903; member of the Maine Medical Association; county medical examiner; at various times a member of the school board; aged 61; died suddenly, February 18, of coronary occlusion.

**Edward R. Kellogg**, Los Angeles; New York Homeopathic Medical College and Hospital, 1891; fellow of the American College of Surgeons; on the staff of the Hollywood Clara Barton Memorial Hospital; aged 67; died suddenly, April 9, of cerebral hemorrhage.

**Alano Eleno Pierce** Ⓢ Minot, N. D.; University of Minnesota Medical School, Minneapolis, 1925; fellow of the American College of Physicians; associated with the Northwest Clinic; on the staff of the Trinity Hospital; aged 35; died, March 14, of pneumonia.

**Tilghman Brice Marden**, Preston, Md.; University of Maryland School of Medicine, Baltimore, 1892; formerly professor of histology and embryology at his alma mater; aged 66; died, March 17, in the Emergency Hospital, Easton, of diabetes mellitus.

**Graham Chambers**, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1889; Trinity Medical College, Toronto, 1892; formerly associate professor of clinical medicine at the University of Toronto Faculty of Medicine; died, March 27.

**Russell Eugene Miller**, Akron, Ind.; Indiana University School of Medicine, Indianapolis, 1930; member of the Indiana State Medical Association; aged 28; died, February 3, in the Woodlawn Hospital, Rochester, of cellulitis of the face and neck.

**Peter Murray** Ⓢ New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1884; fellow of the American College of Physicians; consulting physician to St. Vincent's Hospital; aged 74; died, March 6.

**Alpha Raymond Morse** Ⓢ Oxford, N. Y.; Baltimore Medical College, 1904; past president of the Chenango County Medical Society; county coroner; formerly mayor; aged 64; died, February 16, of chronic nephritis and coronary disease.

**Roy Edgar Barrows** Ⓢ Cairo, Ill.; Northwestern University Medical School, Chicago, 1909; acting assistant surgeon of the U. S. Public Health Service; on the staff of St. Mary's Hospital; aged 51; died suddenly, March 20, of angina pectoris.

**John William McLean**, North Sydney, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., 1883; fellow of the American College of Surgeons; surgeon to the Hamilton Memorial Hospital; aged 79; died, March 28.

**Edwin Eugene Whiteside**, Portland, Ore.; Barnes Medical College, St. Louis, 1907; served during the World War; aged 64; died, March 2, in the Veterans Administration Facility, American Lake, Wash., of bronchopneumonia.

**John Richard Morgan**, Twin Falls, Idaho; Northwestern University Medical School, Chicago, 1907; member of the Idaho State Medical Association; served during the World War; aged 62; died, February 20, of coronary occlusion.

**John Alexander McLeay**, New York; L. A. H., Dublin, Ireland, 1887; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1892; aged 73; died, February 12, at the Columbia-Presbyterian Medical Center.

**John Vincent Kerrigan** Ⓢ Michigan City, Ind.; Northwestern University Medical School, Chicago, 1908; served during the World War; on the staff of St. Vincent's Hospital; aged 50; died, February 10, of pneumonia.

**John Hammond Anderson**, Cranston, R. I.; Tufts College Medical School, Boston, 1904; member of the New England Society of Psychiatry; aged 54; died, February 22, at his home in Auburn, of coronary thrombosis.

**Jerome Bonaparte Rogers**, Pottsville, Pa.; Jefferson Medical College of Philadelphia, 1904; at one time county medical director; formerly medical superintendent of the Pottsville Hospital; aged 59; died, March 2.

**William H. Dings**, Mitchell, Ind.; Louisville (Ky.) Medical College, 1894; member of the Indiana State Medical Association; aged 62; died, February 17, in the Dunn Memorial Hospital, Bedford, of pneumonia.

**David Paul Caldwell**, Sidel, Ill.; Hahnemann Medical College and Hospital, Chicago, 1916; member of the Illinois State

Medical Society; for many years member of the school board; aged 42; died, February 2.

**Elijah George Harris**, Chicago; Bennett Medical College, Chicago, 1915; member of the Illinois State Medical Society; aged 68; died, February 15, of peritonitis and impacted stone in the common bile duct.

**Guy Godley Kilgour** Ⓢ Chicago; Jenner Medical College, Chicago, 1903; aged 63; on the staff of the Chicago State Hospital, where he died, March 31, of peritonitis following perforated duodenal ulcer.

**Eugene McKay Bailey** Ⓢ Acworth, Ga.; Atlanta Medical College, 1890; past president of the Cobb County Medical Society; aged 67; died, March 2, in a hospital at Atlanta, of coronary thrombosis.

**William Joseph Durkin**, Brooklyn; University of Maryland School of Medicine, Baltimore, 1911; aged 53; died, March 3, in the Kings County Hospital, of cerebral hemorrhage and hypertension.

**Julian Terrell Coggeshall**, Darlington, S. C.; University of Louisville (Ky.) Medical Department, 1907; member of the South Carolina Medical Association; aged 60; died, March 1, of pneumonia.

**Carl Frederick B. Fuchs**, Brooklyn; University of the City of New York Medical Department, 1890; aged 74; died, March 11, in the Kings County Hospital, of arteriosclerosis and thrombosis.

**Robert H. Craig** Ⓢ Charleston, Ill.; Louisville (Ky.) Medical College, 1900; formerly secretary of the Coles-Cumberland County Medical Society; aged 62; died, February 20, of septicemia.

**James Albert Anderson**, Gastonia, N. C.; University of Georgia Medical Department, Augusta, 1899; served during the World War; aged 59; died, March 13, of nephritis and myocarditis.

**Louis Putnam Earnshaw**, Cincinnati; Miami Medical College, Cincinnati, 1895; aged 64; died, March 23, in the Hamilton County Home and Chronic Disease Hospital, of chronic myocarditis.

**James M. King**, Metcalf, Ga.; Chattanooga (Tenn.) Medical College, 1894; aged 77; died, February 7, in the Archbold Memorial Hospital, Thomasville, of pyelonephrosis and uremia.

**A. C. Heidman**, Columbia, Mo.; St. Louis College of Physicians and Surgeons, 1883; aged 74; died, March 3, in the Parker Memorial Hospital, of influenza and pulmonary edema.

**Dagobert A. Scheibenzuber**, Hyde Park, Ohio; Cincinnati College of Medicine and Surgery, 1891; aged 67; was found dead in his automobile, February 25, of cerebral hemorrhage.

**Walter Lee Beauchamp**, Williamson, Ga.; Atlanta College of Physicians and Surgeons, 1908; aged 52; died, February 29, in the Strickland Memorial Hospital, Griffin, of erysipelas.

**Francis M. Ward**, Washington, D. C.; Georgetown University School of Medicine, Washington, 1881; aged 78; died, January 24, in the Garfield Hospital, of cerebral hemorrhage.

**Fred H. Davis**, Lyndonville, Vt.; Hahnemann Medical College and Hospital, Chicago, 1890; member of the Vermont State Medical Society; aged 78; died, February 22, of erysipelas.

**John Joseph Garry**, Worcester, Mass. (licensed in Massachusetts in 1914); for many years on the staff of St. Vincent Hospital; aged 55; died, March 25, of coronary occlusion.

**William Henry Ellis**, Gladstone, Mich.; Rush Medical College, Chicago, 1880; aged 80; died, February 24, in St. Francis Hospital, Escanaba, of fracture of the right hip.

**Frederick August Karst** Ⓢ Chicago; Hahnemann Medical College and Hospital, Chicago, 1887; aged 82; died, February 27, of chronic myocarditis, at his home in Wilmette, Ill.

**William Louis Abbott**, Elk Neck, Md.; University of Pennsylvania Department of Medicine, Philadelphia, 1884; aged 76; died, April 2, of myocarditis and lobar pneumonia.

**William H. Hughes**, Greensboro, N. C.; Meharry Medical College, Nashville, Tenn., 1888; aged 73; died, February 17, of basal fracture of skull due to a fall down the stairs.

**Harry Andrews Collings** Ⓢ Susanville, Calif.; College of Physicians and Surgeons of San Francisco, 1911; aged 55; died, March 8, at St. Helena, of chronic cholecystitis.

**Edgar James Torey**, Delmar, N. Y.; University of the City of New York Medical Department, 1890; aged 77; died, February 3, of carcinoma of the tongue and anemia.

**Anna Laura Taylor**, Elkins, W. Va.; Laura Memorial Woman's Medical College, Cincinnati, 1898; aged 70; died, March 9, in a hospital at Weston, of gangrene.



**Clarence Follett Smith**, Ransomville, N. Y.; University of the City of New York Medical Department, 1880; aged 79; died, February 4, of cerebral hemorrhage and senility.

**Thomas Macer**, Evansville, Ind.; Eclectic Medical Institute, Cincinnati, 1884; aged 75; died, February 1, of cardiac decompensation, arteriosclerosis, hypertension and nephritis.

**Ortive E. Latham**, Ann Arbor, Mich.; Hahnemann Medical College and Hospital, Chicago, 1882; aged 83; died, February 22, of heart disease and carcinoma of the prostate.

**Alton Sanford**, Weston, W. Va.; Tulane University of Louisiana School of Medicine, New Orleans, 1929; aged 31; died, February 18, in Ryland, Ala., of pneumonia.

**James R. Labadie**, Fraser, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; aged 61; died, March 20, in the Ford Hospital, Detroit, of diabetes mellitus.

**William A. Powers**, Pacific, Mo.; Beaumont Hospital Medical College, St. Louis, 1898; aged 59; died, March 11, in St. John's Hospital, St. Louis, of Hodgkin's disease.

**John Ralph Mabee**, Chicago; University of Louisville (Ky.) Medical Department, 1895; aged 63; died, February 12, in the Alexian Brothers' Hospital, of diabetes mellitus.

**James Thomas A. Wright**, Salisbury, N. C.; College of Physicians and Surgeons, Baltimore, 1892; aged 63; died, March 10, in Punxsutawney, Pa., of pneumonia.

**Justin Starr Barker**, Kennebunk, Maine; Howard University College of Medicine, Washington, D. C., 1889; aged 69; died, February 17, of coronary thrombosis.

**Eugenie Ferguson Boies**, Buda, Ill.; Jenner Medical College, Chicago, 1909; aged 63; died, February 12, in the Perry Memorial Hospital, Princeton, of pneumonia.

**Colbert Smith Davis**, Rock Island, Ill.; Northwestern University Medical School, Chicago, 1909; aged 54; died, February 9, in St. Anthony's Hospital, of pneumonia.

**Clark E. Ernest**, Gasport, N. Y.; University of Buffalo School of Medicine, 1888; aged 77; died, March 12, in the City Hospital, Lockport, of cerebral hemorrhage.

**Albert Corryden McGee**, McNabb, Ill.; Eclectic Medical Institute, Cincinnati, 1881; aged 80; died, February 20, in St. Mary's Hospital, La Salle, of myocarditis.

**David Lewis Holland**, Chicago; Loyola University School of Medicine, Chicago, 1917; aged 55; died, February 18, of coronary thrombosis and chronic nephritis.

**Thomas H. D. Stuart**, Dallas, Texas; Philadelphia University of Medicine and Surgery, 1867; Confederate veteran; aged 96; died, February 22, of nephritis.

**Norman Bond Kerr**, Plainfield, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1882; aged 76; died, March 27, of cerebral hemorrhage.

**George E. Wire**, Worcester, Mass.; Chicago Medical College, 1883; aged 77; was found dead in bed, February 23, of arteriosclerosis and coronary sclerosis.

**James E. Clark**, Detroit; Detroit College of Medicine, 1912; member of the Michigan State Medical Society; aged 56; died, March 12, in the Providence Hospital.

**Mary Freeman** ♂ Perrine, Fla.; Medical College of the State of South Carolina, Charleston, 1912; aged 67; was killed, February 2, in an automobile accident.

**Frederick Wanton Van Valkenburg**, Long Prairie, Minn.; University of Minnesota Medical School, Minneapolis, 1925; aged 37; died, February 4, in Anoka.

**George Frank Day**, Washington, D. C.; Pulte Medical College, Cincinnati, 1883; aged 78; died, February 17, in the Homeopathic Hospital, of pneumonia.

**Franklin John Kaufmann** ♂ Syracuse, N. Y.; Harvard University Medical School, Boston, 1887; aged 72; died, February 6, of carcinoma of the rectum.

**Charles M. Heberton**, Denver; Medico-Chirurgical College of Philadelphia, 1897; aged 65; died, February 8, in St. Anthony's Hospital, of pneumonia.

**Harry Edgar Hall**, Chattanooga, Tenn.; Southern College of Medicine and Surgery, Atlanta, 1913; aged 44; died, February 21, of cerebral hemorrhage.

**Edwin Sturtevant Steese** ♂ New York; Harvard University Medical School, Boston, 1893; aged 66; died, February 7, in the Roosevelt Hospital.

**Carrol Clinton Carpenter**, Minneapolis; University of Minnesota Medical School, Minneapolis, 1897; aged 63; died, February 9, of heart disease.

**Frank M. Archibald** ♂ Mahanomen, Minn.; College of Physicians and Surgeons of Chicago, 1893; aged 70; died, March 1, of cerebral hemorrhage.

**William Bonnar**, Chicago; Faculty of Medicine of Trinity College, Toronto, Ont., Canada, 1882; aged 79; died, February 29, of chronic myocarditis.

**Michael Joseph Ford**, Omaha; John A. Creighton Medical College, Omaha, 1901; aged 64; died, February 18, of coronary thrombosis and myocarditis.

**Condy C. Gallagher**, Manayunk, Pa.; Atlanta College of Physicians and Surgeons, 1900; also a dentist; aged 73; died, March 13, of myocarditis.

**John B. Curtis**, Orange Heights, Fla.; Medical School of Maine, Portland, 1879; aged 81; died, March 4, of bronchopneumonia and peritonitis.

**James Frank Leslie**, Marshfield, Ore.; Northwestern University Medical School, Chicago, 1903; aged 56; died, February 4, of pneumonia.

**Malcolm Wayland Everson**, Pittsburgh; Jefferson Medical College of Philadelphia, 1889; aged 68; died suddenly, February 6, in New York.

**Samuel P. Miller**, Columbia, Ky.; University of Louisville Medical Department, 1888; formerly county health officer; aged 71; died, February 26.

**Mary Emma Bliss Robinson**, Duxbury, Mass.; Boston University School of Medicine, 1897; aged 79; died, February 26, of lobar pneumonia.

**Charles Kelley**, Franklinville, N. Y.; University of Buffalo School of Medicine, 1899; aged 66; died, February 29, of scurvy and secondary anemia.

**Harry Cleveland Harris**, Brooklyn; Jefferson Medical College of Philadelphia, 1908; aged 50; died, February 19, of cerebral hemorrhage.

**William Lloyd Hughes**, East Chicago, Ind.; Barnes Medical College, St. Louis, 1899; aged 63; died, February 18, of coronary thrombosis.

**Harry S. P. Lare**, St. Louis; Missouri Medical College, St. Louis, 1881; aged 74; was found dead in bed, March 8, of cerebral hemorrhage.

**Edwin B. Olmstead**, Cleveland Heights, Ohio; Georgetown University School of Medicine, Washington, D. C., 1887; aged 74; died in March.

**Howard Stanley Allen** ♂ Delta, Pa.; University of Maryland School of Medicine, Baltimore, 1931; aged 28; died, March 7, of scarlet fever.

**John M. Fisher**, Hagerstown, Ind. (licensed in Indiana in 1897); aged 90; died, February 22, of chronic nephritis and arteriosclerosis.

**Isaac L. McGinness**, Pikeville, Tenn.; Chattanooga Medical College, 1899; aged 64; died, February 27, of a self-inflicted bullet wound.

**George Whipple Hubbard**, Houston, Texas (registered by Texas State Board of Medical Examiners); aged 62; died, February 8.

**Thomas Moore Hoskins**, Oklahoma City, Okla.; University of Nashville (Tenn.) Medical Department, 1892; died, February 8.

**Perry M. Brown**, Wheeling, W. Va.; Meharry Medical College, Nashville, Tenn., 1922; aged 37; died, February 25, of pneumonia.

**George Wynn Shirk**, New York; Rush Medical College, Chicago, 1897; aged 63; died, February 16, of cerebral hemorrhage.

**Carl Boright Dunn**, Madison, Ind.; University of Vermont College of Medicine, Burlington, 1900; aged 64; died in February.

**George Aubry Henry**, Horatio, Ark. (licensed in Arkansas in 1903); aged 69; died, February 19, in a hospital at Texarkana.

**Greene B. Jackson**, Fairland, Okla. (licensed in Arkansas in 1903); aged 72; died, March 25, of carcinoma of the stomach.

**Samuel Donaldson Petros**, Tenn.; Chattanooga Medical College, 1901; aged 59; died, March 2, of cerebral hemorrhage.

**Daniel George Lawton**, Detroit; Saginaw Valley Medical College, 1901; aged 57; died, February 9, of multiple sclerosis.

**Samuel John Randall**, Denver; Pulte Medical College, Cincinnati, 1880; aged 83; died, February 19.

**R. C. Arbaugh**, Booneville, Ark. (licensed in Arkansas in 1903); aged 64; died, February 29.

## Bureau of Investigation

### MISBRANDED "PATENT MEDICINES"

#### Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

**666 Salve.**—Monticello Drug Co., New York, New Orleans, Jacksonville, Fla., and Mexico City. Composition. Essentially volatile oils including camphor, menthol, eucalyptus and a coniferous oil such as cedar leaf oil, in petrolatum. For catarrh, chills, streptococcal infections, etc. Fraudulent therapeutic claims—[N. J. 23264, May, 1935.]

**Herb Tea No. 10.**—Arko Herbs, Inc. Composition. Essentially ground senna pods, with small amounts of sassafras bark and fennel seed, and minute amounts of senna leaf and bearberry. Cure-all. Fraudulent therapeutic claims—[N. J. 23272, May, 1935.]

**Arko Healing Salve.**—Arko Herbs, Inc. Composition. Essentially boric acid (4 per cent), zinc oxide (4.6 per cent), and a compound of aluminum, carbolic acid and water, in petrolatum. Fraudulent therapeutic claims—[N. J. 23272, May, 1935.]

**Holbrook's Ka-Kola.**—Holbrook Kola Co., Boston. Composition. Essentially acetanilid (4.68 grains), caffeine (10 grain), baking soda (1.9 grains) and crude drugs including celery seed, cinnamon and red pepper. For headache, grippe, female complaints, asthma, malaria, etc. Fraudulent therapeutic claims—[N. J. 23274, May, 1935.]

**Prestolas.**—Union Capsule Co., Bloomfield, N. J. Composition. Capsules consisting essentially of volatile oils including pennyroyal and savin (42 per cent), and a fixed oil. For female disorders. Fraudulent therapeutic claims—[N. J. 23276, May, 1935.]

**Epsotabs.**—Dill Co., Norristown, Pa. Composition. In each tablet 1½ grains phenolphthalein and about 4½ grains of epsom salt; one specimen also contained aloin. Misbranded because the name "Epsotabs, The Laxative" on the label falsely represented that the stuff was entirely epsom salt, whereas, its chief laxative action was due to phenolphthalein and, in one specimen, to phenolphthalein and aloin—[N. J. 23277, May, 1935.]

**Re-Ju-Va.**—Re Ju-Va Co., Columbus, Ohio, and Minneapolis. Composition. A red watery solution with a peppermint odor, consisting essentially of epsom salt, iron chloride, and a small amount of citric acid, with glycerin and mineral hypophosphites. Cure-all. Fraudulent therapeutic claims—[N. J. 23279, May, 1935.]

**Rawleigh's Tonic Compound.**—W. T. Rawleigh Co., Freeport, Ill. Composition. Essentially small amounts of sodium, potassium, calcium, iron, manganese, quinine and strychnine salts, hypophosphites, citrates, alcohol, sugar and water. For underweight, general debility, nervous disorders, etc. Fraudulent therapeutic claims—[N. J. 23280, May, 1935.]

**Rawleigh's Thyme Cough Compound.**—W. T. Rawleigh Co., Freeport, Ill. Composition. Essentially extract of thyme, with alcohol, sugar and water. For coughs, bronchitis, asthma, whooping cough, etc. Fraudulent therapeutic claims—[N. J. 23280, May, 1935.]

**Rawleigh's Liniment.**—W. T. Rawleigh Co., Freeport, Ill. Composition. Essentially red pepper extract, camphor, pine oil, an ammonium compound, alcohol and water. Fraudulent therapeutic claims—[N. J. 23280, May, 1935.]

**Rawleigh's Pain Relief.**—W. T. Rawleigh Co., Freeport, Ill. Composition. Essentially red pepper extract, camphor, soda, an ammonium compound, alcohol and water. Fraudulent therapeutic claims—[N. J. 23280, May, 1935.]

**Marisco Menthol Inhaler.**—John M. Maris Co., Inc., New York. Composition. Menthol in an inhaler. For catarrh, hay fever, asthma, etc. Fraudulent therapeutic claims—[N. J. 23283, May, 1935.]

**Bulgarian Marvel Herb Tea Compound.**—Marvel Products Co., Pittsburgh. Composition. Essentially epsom salt (10.3 per cent), senna leaves, bearberry leaves, sassafras bark, licorice bark, dog grass, elder flowers, lavender flowers, fennel seed and anise seed. For stomach, liver, kidney and blood disorders. Misbranded because not of Bulgarian origin and because not composed entirely of herbs. Fraudulent therapeutic claims—[N. J. 23284, May, 1935.]

**Grove's Emulsified Nose Drops.**—Paris Medicine Co., St. Louis. Composition. Essentially ephedrine hydrochloride, menthol, a chlorine compound, mineral oil and water. Not germicidal, as represented. Fraudulent therapeutic claims—[N. J. 23285, May, 1935.]

**Amenoco Capsules.**—Purity Drug Co., Inc., New York. Composition. Essentially quinine sulfate (0.86 grains per capsule), aloë, powdered plant material, and essential oils including pennyroyal oil. For menstrual disorders. Misbranded because contents were misrepresented and because of fraudulent therapeutic claims—[N. J. 23293, May, 1935.]

**Manikin Tea.**—Manikin Products, Inc., New York. Composition. Essentially senna leaves, calendula flowers, coriander fruits, anise seed, marine algae (fucus), sassafras bark, corn flowers and althea roots. For obesity. Fraudulent therapeutic claims—[N. J. 23289, May, 1935.]

**Live-On Tonic.**—Live On Medicine Co., St. Louis. Composition. Essentially plant drug extracts including rhubarb, with alcohol, sugar and water. Fraudulent therapeutic claims—[N. J. 21227, August, 1934.]

## Correspondence

### LEUKEMIA OR POLYCYTHEMIA

*To the Editor:*—The article "Leukemia with Thrombocytosis" by Dr. Carl B. Drake in *THE JOURNAL*, March 21, interested me very much. It is unfortunate that the case is labeled "leukemia" and not "polycythemia," since the report brings up a number of points of interest in connection with the latter disease. First of these is the hemorrhagic tendency in polycythemia, which is often quite striking and has been commented on by many observers. In my own series of twenty cases it has been a common symptom. The bleeding may be spontaneous, as from the nose, the stomach or the bowel, or it may be present as a persistent oozing following such operative procedures as extraction of teeth or abdominal operations. The tendency to bleed appears to have nothing whatever to do with the platelets, the bleeding time or the clotting time but is probably the result of injury to the widely overdistended capillaries which are a feature of the disease.

A platelet count of 2.5 million per cubic millimeter was not at all unusual in my own series of cases. The count is usually in the neighborhood of 1 million; in four cases the platelet count has remained consistently between 2 and 3.3 million with a corresponding increase in the platelet volume, which may be as great as 3 per cent of the total volume of blood. Bits of megakaryocytes are not infrequently found. As in Dr. Drake's case, extreme elevation in platelets may be present even though the erythrocyte count is not excessive. In two of my cases the platelets ranged between 2.5 and 3.3 million per cubic millimeter, with red cell counts between 5.5 and 7 million. This is not difficult to understand when one observes the bone marrow, which shows great hyperplasia not alone of the red cell forming elements but of the leukocytes and megakaryocytes as well. Indeed, the latter structures are sometimes so numerous that they may overshadow the rest of the cellular tissue. This hyperplasia of all the marrow elements is reflected in the blood picture, which shows an increase in red cells, white cells and platelets. Polycythemia should thus be considered a disease not alone of the red cells but of all the cells formed in the marrow. The three elements need not necessarily be elevated in the same relative fashion, in some cases the platelets, in others the leukocytes being in the ascendency. The white cells are frequently immature, myelocytes, even myeloblasts, at times being seen. Indeed, the leukocytic picture is sometimes so abnormal as to suggest myeloid leukemia.

In a woman presenting, as in the case report referred to, a plethoric appearance, cyanosis of the lips, prominent retinal veins, splenohepatomegaly, hypertension, a hemorrhagic tendency, oozing of blood following operation, rapid return in erythrocyte count following hemorrhage and elevation in the red cell count to 5.8 million, elevation in the leukocyte count, elevation in polymorphonuclears, and extreme elevation in platelet count, it seems unwise to make the diagnosis of leukemia, especially since all these features are quite typical of polycythemia.

WILLIAM DAMESHEK, M.D., Boston.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

### PULMONARY HEMORRHAGE

To the Editor—Mrs E. W., aged 50, white, is subject to periodic pulmonary hemorrhages. She reports having had the first when she was 30 years old and then none for thirteen years. Following the second she has had them every year or two. The majority have come in the spring, although she had one at Christmas time and the last one came in January of this year. The attacks come on suddenly, with little warning, and irrespective of what she happens to be doing at the time. The quantity of blood varies considerably. I have seen her in two attacks, and during the last (the most severe so far) she lost easily a quart of blood. This last bleeding began about 1 p. m. and continued until almost 6 o'clock, in spite of all measures used. Opiates, ergot and fibrinogen, with an ice pack over the chest were used. Following the hemorrhage, blood streaked sputum was expectorated for a couple of days, followed by dirty, brown sputum for a couple of weeks. The patient complained of a soreness over the right lung in the upper part of the chest. Following the hemorrhage, her blood pressure was 155 systolic, 90 diastolic, her pulse 81 and regular. Her present weight two months after the attack is 211 pounds (96 Kg.). Her blood count now is 5,000,200 red blood cells, 5,800 white blood cells, hemoglobin 70 per cent, coagulation time four minutes for a drop on a slide. Following an earlier hemorrhage, the patient reports an examination by a competent internist, with roentgenograms, and a report by him as to conditions in the chest. I would be grateful for suggestions as to the cause of these hemorrhages and their treatment. The patient looks forward with apprehension to these attacks.

M D, Illinois

ANSWER.—Pulmonary hemorrhage is caused by a number of conditions, not all of which are easily detected without special methods of examination. With the first hemorrhage occurring about twenty years ago, the second seven years ago, and a hemorrhage every year or two for the last seven years, one must consider such conditions as bronchiectasis, pulmonary abscess, pulmonary tuberculosis, broncholithiasis and varices of the trachea and bronchi. While it is probable that all the hemorrhages have been caused by the same condition, it is entirely possible for a new condition to have more recently developed, such as malignancy.

Good x-ray films of the chest in the anteroposterior and oblique diameters might be helpful in locating the condition. While it is impossible to determine with accuracy the etiology from x-ray films, the location of shadows facilitates other methods of examination. If shadows are found in the bases of one or both lungs, one should immediately investigate whether there is much sputum present and whether it has a fetid odor. The laboratory examination of the sputum for tubercle bacilli, fungi, spirochetes and fusiform bacilli may determine the etiology. However, if none of these micro-organisms are found, the introduction of iodized oil into the involved area followed by x-ray films may bring to light sacculations or dilatations of bronchial ramifications indicating bronchiectasis or even abscess cavities which could not be visualized by films made without the use of iodized oil. Moreover, the part of the lung and bronchial tree lying anterior to or posterior to the dome of the diaphragm and not ordinarily visualized may be distinctly outlined by the iodized oil, which casts a denser shadow than the dome of the diaphragm and subphrenic structures.

If the shadows are located in the upper half of one or both lungs, one should suspect tuberculosis more strongly and should put forth special effort to recover tubercle bacilli from the sputum, not only by numerous direct smear microscopic examinations but also by animal inoculation, culture and flotation methods. At the same time, one should make a careful search for other micro-organisms. In the event of failure to find any specific micro-organisms, if the sputum is foul one is justified in introducing iodized oil and making further x-ray films, since pulmonary abscess and bronchiectasis occasionally exist in the upper lobes.

When the microscopic examination and the iodized oil fail to reveal evidence of etiology, one is justified in making a bronchoscopic examination for the purpose of inspecting as much as possible of the involved region and if necessary the removal of a small amount of tissue for biopsy.

If the original x-ray film reveals no abnormal shadows except evidence of calcium deposits in the hilus or Ghon tubercle formation in the lung parenchyma, one must not overlook the fact that such calcium deposits through their sharp edges are capable of cutting through the walls of ramifications of the bronchi and producing hemorrhage. In some cases these calcium deposits will find their way into the lumen of a bronchial ramification and may be expectorated as a lung stone, or they

may be aspirated into a dependent part of the bronchial tree where they may set up a foreign body abscess. Again, they remain in the tissues adjacent to the bronchial wall and may be the cause of repeated hemorrhage. In such cases bronchoscopic examination may be the only method of determining the source of the hemorrhage. This is also the only method of determining the source of hemorrhage due to varices.

In some cases even bronchoscopic examination in the interval between hemorrhages produces no significant evidence, and therefore it becomes necessary to make this phase of the examination soon after a hemorrhage, while there is still some blood present which the bronchoscopist can trace to its source. Not infrequently the bronchoscopist finds previously unsuspected malignant, syphilitic or tuberculous lesions and occasionally previously undetected foreign bodies as the cause of hemorrhage.

One must not overlook the fact that repeated pulmonary hemorrhages are not infrequently caused by mitral stenosis. Therefore, careful examination of the heart is always indicated in such cases.

### EXFOLIATIVE DERMATITIS

To the Editor—I have a patient who has been diagnosed as having dermatitis (eczema) exfoliativa by a specialist in New York and Philadelphia and who has applied all kinds of ointments and antiseptic solutions without any result. It followed a nervous breakdown of two years' standing. He has been given solution of potassium arsenite by mouth, colloidal sulfur by vein and muscle, colonic irrigations, large doses of bromides, and other sedatives, yet the skin condition persists. I wonder if you can help me relieve this patient of some of his skin irritation. The Wassermann reaction is negative, blood chemistry is normal, the blood count is normal, urinalysis is normal, the basal metabolism is normal and gastric analysis is normal. He has also had an autogenous vaccine made from the lesions, a mixed staphylococcus and streptococcus vaccine, and small roentgen and ultraviolet treatments. I should like to know the possibility of his having a Monilia infection, as was diagnosed by one pathologist. Please omit name.

M D, New Jersey

ANSWER.—The occurrence of an exfoliative dermatitis presents a number of diagnostic possibilities. One must rule out the possibility of the condition being on a toxic (drug) basis secondary to arsenic or other heavy metal intoxication. Although now normal, the blood count should be repeated at regular intervals to rule out the prodromal stage of one of the lymphoblastomas. Is there any glandular or splenic enlargement? If a gland is enlarged, it as well as the skin should be examined microscopically to rule out a leukemia, pseudoleukemia or related conditions. A generalized monilia infection or a secondary toxic monilia is a possibility. With these, however, there should be a definite picture of an active yeast infection in the intertriginous areas, such as the groin, inframammary region, pendulous folds of the abdomen, or the axillae. While these conditions might simulate an exfoliative dermatitis, there is a greater tendency usually to moisture and oozing in yeast infections. Cultural examination for monilia should be made, but one must bear in mind that yeast may occur as a secondary invader in chronic exfoliative processes of the skin.

Any etiologic factor that may be revealed by further examination should be treated specifically. The use of warm alkaline and starch baths, bland ointments, equal parts of solution of calcium hydroxide and olive oil, a high vitamin diet (vitamins A, B and D), high caloric feedings and sodium thiosulfate intravenously are recommended. Autohemotherapy and dicalcium phosphate by mouth may also be used.

### STRICTURE OF RECTUM

To the Editor—I have three cases of stricture of the rectum. I have been told that the majority of cases of stricture of the rectum are due to granular inguinal, and not due to syphilis, as we were taught up to a few years ago. Would you please send me complete data?

JOSEPH HALTON, M D, Sarasota, Fla.

ANSWER.—Strictures may be either malignant or benign and the latter may be inflammatory, syphilitic, gonorrheal, tuberculous, traumatic, dysenteric, and so on.

It is assumed that the three cases of stricture of the rectum mentioned in the query are examples of "inflammatory rectal stricture." Recent investigations have led to the belief that "syphilitic" stricture of the rectum is uncommon and that the coarctation so named is often caused by the virus of lymphogranuloma inguinale. The more common synonyms for this disease are the disease of Nicolas and Favre, poradenitis, climatic bubo, the sixth venereal disease, esthiomene, anorectal syphiloma, and the genito-ano-rectal syndrome.

The term "granular inguinal" as given in the query has no doubt been mistaken for the disease known as "granuloma inguinale." This entity has been confused with lymphogranuloma inguinale. As a means of avoiding such an error it has

been suggested that the title "lymphogranuloma inguinale" be changed to "lymphopathia venereum." The name "lymphopathia venerea" has also been suggested.

H. Stannus Stannus, in the preparation of his monograph entitled "The Sixth Venereal Disease," has reviewed more than 900 papers. He explains much of the confusion that existed formerly by the fact that climatic bubo, inflammatory rectal stricture, esthiomene and the like were believed to be separate clinical entities. It is now thought that these are among the various manifestations of a single disease entity, lymphopathia venerea.

The disease is usually venereal in origin. The primary external genital lesion in the male results in inguinal adenitis because of the nature of the lymphatic drainage of the external genitalia. When the primary lesion of the male is carried to the female, her initial lesion is likely to develop on the vaginal wall or on the cervix. The perirectal lymphatics are then involved either directly by way of the lymphatic network of the rectovaginal septum or indirectly through their connections with the vaginal and cervical collecting vessels lying in the rectal stalks. This is believed to be at least a part of the probable mechanism of the pathogenesis of inflammatory rectal stricture in the female. This type of stricture of the rectum does occur in the male, owing probably to sodomy or to a spread of the virus from anal to rectal lymphatics.

An excellent aid to the diagnosis of lymphopathia venerea is the skin reaction known as the Frei test. Probably the most suitable Frei antigen available at present is that prepared by Lederle from lymphogranulomatous mouse brains.

In addition to Stannus's monograph, the following works are recommended:

- Nicolas, J.; Favre, M., and Durand: Lymphogranulomatosose inguinale subaigue d'origine genitale probable, peut-être vénérienne, *Bull. et mém. Soc. méd. d'hôp. de Paris* 35: 274 (Jan. 31) 1913.  
Hillsman, J. A.; Wilshusen, H. F., and Zimmerman, H. M.: Lymphogranulomatosis Inguinalis, *Arch. Dermat. & Syph.* 18: 383 (Sept.) 1928.  
Wolf, Jack, and Sulzberger, M. B.: Lymphopathia Venereum, *Brit. J. Dermat.* 44: 192 (April) 1932.  
Sulzberger, M. B., and Wise, Fred: Lymphopathia Venereum, *The Journal*, Oct. 22, 1932, p. 1407.  
Lee, Henry, and Staley, R. W.: Inflammatory Strictures of the Rectum and Their Relation to Lymphogranuloma Inguinale, *Ann. Surg.* 100: 486 (Sept.) 1934.  
Wien, M. S.; Perlstein, Minnie O., and Nieman, B. H.: Inguinal Lymphogranuloma in Its Relation to Stricture of the Rectum, *Arch. Path.* 19: 331 (March) 1935.

#### HYPERTENSIVE DISEASE

To the Editor:—In one specific case (in a Negro) the blood pressure reading, some five years ago, was 220 systolic, 150 diastolic. During the past years the blood pressure has been 120/80. In the five years the patient had what he described as paresis of the left upper face, which today is barely demonstrable. This is one of several cases in which marked hypertension cleared up after some injury. What would probably be the disease condition in this case and the explanation as to why the blood pressure returned to within normal limits and the patient is comparatively well.

E. J. BERANGER, M.D., New Orleans.

ANSWER.—The query does not state whether the hypertension of 220/150 five years ago was found on only a single observation or repeatedly and, if repeatedly, over how long a period. This is an essential point, for one must distinguish between the "hypertensive state" and "hypertensive disease." A state of hypertension or increased blood pressure may exist transiently without instituting the progressive changes of hypertensive disease (often loosely termed "essential hypertension"). The state of hypertension has the same physiologic background as the hypertension in hypertensive disease. Hypertensive disease is instituted by prolonged hypertension and may be said to occur when the hypertension becomes persistent and progressive. There are many factors that may cause a transient hypertension which subsides when the etiologic influences cease to operate. These etiologic factors may initiate hypertensive disease in constitutionally vulnerable individuals and/or when the provocative influences are of long duration. Eclampsia may be cited as an example; with the subsidence of the acute intoxication the arterial tension falls and persistence of hypertension and the initiation of hypertensive disease are the exception rather than the rule. If progressive hypertensive disease is initiated by eclamptic intoxication it implies a notably vulnerable constitution and susceptible vasomotor apparatus. Acute plumbism, psychic turmoil, fear, acute nephritis with good repair and other intoxications may cause a transient state of hypertension.

Hypertensive arterial disease manifests little or no tendency to remission; it is typically a persistently progressive disorder, varying greatly however in the rate of progression in different individuals.

The localized facial paresis may have been purely coincidental. There is no evidence presented in the query implying a necessary correlation of the reduced arterial tension and the

paresis. It is conceivable, but highly improbable, that a cranial injury would so affect rather permanently the vasomotor center. Before drawing any conclusions from the statement that "marked hypertension cleared up after some injury" one must know the duration as well as the intensity of the hypertension existing prior to the injury, the nature of the injury and many other factors. No generalization is warranted by the present state of knowledge.

#### INVESTIGATION OF THYROID DEFICIENCY

To the Editor:—A white woman, aged 28, of American birth, felt normal until the age of 13. At that time menstruation began and she noted a marked diminution of her normal vigor and wished only to lie down. The menses were irregular from the start. She remained quite thin until the age of 17, when in two months she gained 22 pounds (10 Kg.), mostly in the form of a boggy swelling of the cheeks, under the arms and of the ankles. At this time she noted amenorrhea of three months' duration. After the next menstrual period the swelling disappeared and she felt slightly more vigorous. Physical examination was supposedly negative. At 18 she noticed a slight diffuse enlargement of the thyroid. After this she experienced more nearly her usual pep and vigor and lost practically all the swelling. Shortly after this a tonsillectomy was done and two weeks later an acutely inflamed appendix was removed. At 24 the thyroid was much larger and a lump was seen in the right side of the gland. Edema of the face, chest and ankles began again. One year later a thyroidectomy was done, at which time the basal metabolic rate (previous to operation) was minus 17. Four days after the operation, thyroid was started by mouth and has been continued since. She does not know what her blood pressure and pulse were before the operation, but both were elevated afterward and the edema was worse. She has been extremely nervous, has not menstruated, and has been unable to get the basal metabolic rate above —13 since that time. Her nails have broken off easily and her hair and skin have been extremely dry. There has been no interest in anything and she has wanted to rest all the time. Sexually she is very cold. She appears very plethoric but mentally is alert and keen. She is normal except for the dryness of the skin, brittleness of the nails, and puffiness of the cheeks, chest and ankles. Her legs are almost bronzed practically to the hips. The ankles pit slightly on pressure. The pulse rate is 132 and the blood pressure 155 systolic, 118 diastolic. The blood and the urine are normal and the basal metabolic rate is —23. I should like to have a complete diagnosis, if possible, and to have some suggestions as to possible treatment. Please omit name.

M.D., Michigan.

ANSWER.—The correspondent's problem is a difficult one. No explicit diagnosis can be given without further study. Needed are urinalysis, tests of renal function, a series of metabolism determinations under basal conditions, a study of pulse rate and blood pressure during sleep and rest, and a study of sex hormones in the blood and urine. No opinion can be given relative to the adequacy of thyroid administration, as the correspondent does not state how much thyroid the patient has received. Moreover, there is wide variation in the amount of thyroid needed to elevate the metabolisms of patients with low metabolisms without myxedema. Provided there is no kidney disease, the hypertension is relatively insignificant, the pulse rate is normal under resting conditions, and the basal metabolism is consistently low, thyroid should be given in amounts sufficient to raise the metabolism gradually to a point within the accepted range of normal. If the condition of the patient improves under these circumstances, medication with thyroid could be continued. If no improvement results, intensive investigation is indicated.

#### HAIR DRESSING FOR ASTHMATIC CHILD

To the Editor:—Will you kindly suggest either the name or the formula for a hair dressing for an asthmatic child? Skin tests have shown that the child is sensitive to numerous proteins. Petrolatum has been unsatisfactory. The numerous popular hair dressings have an odor to which I am afraid the child may prove sensitive. Please omit name.

M.D., New York.

ANSWER.—To obtain a hair dressing to which an asthmatic child cannot be sensitized is impossible; but it should be easy to obtain one to which this particular child is not at this time sensitive. An alcoholic solution of castor oil, slightly scented with some perfume, as lemon verbena, to which the child is not sensitive, may give satisfaction. Castor oil is chosen because it is somewhat soluble in alcohol. If the child is sensitive to the oil or the perfume, other oils or perfumes may be substituted.

If, as the trial of petrolatum suggests, a dressing is desired that will paste down the hair, "set it" in rigid ringlets, as is the barbarous custom, the difficulty is somewhat greater. Mix 0.1 Gm. of tragacanth powder with 0.2 cc. of isopropyl alcohol in a large dry bottle. Add 8 cc. of hot water and shake vigorously. Dissolve 0.25 cc. of terpinol in 9.8 cc. of isopropyl alcohol and add it in small amounts to the mucilage of tragacanth, shaking the mixture each time. Then add rose water to make 100 cc. The hair may be wet with this before curling, provided no sensitization exists to any of the ingredients. Any procedure that interferes with vigorous daily brushing should be frowned on, for it deprives the scalp of needed stimulation.

## ANEMIA IN CHILD

To the Editor—A woman, American, aged 21, married, gave birth five years ago to an apparently normal 6 pound (2.7 Kg.) boy. At the age of 7 weeks and a few days he began refusing feedings at night. I was called to see the child about one week after it became sick. Realizing that the child was almost in a dying condition, I did a transfusion but death occurred in three or four hours. Because of the hurry I did not get a blood study. Apparently some severe anemia existed. I operated on the mother about three years ago, following the birth by two years. I did an appendectomy, suspension of the uterus and perineal repair but preserved the child bearing function because the couple earnestly desired a child. July 27, 1935, she gave birth to an apparently normal female child weighing 7 pounds 3 ounces (3,260 Gm.) It got along well for about three weeks, then on two occasions I was called out at night to see it. The child seemed to have had convulsions and stiffened out but, by the time I arrived, was apparently normal. It was always pale, especially the mucous membranes, but seemed to be gaining in a perfectly normal fashion and I did not make a blood study. At the age of 10 weeks it began to vomit all the feedings, and under change of diet it still vomited considerable (tentative diagnosis pyloric stenosis), and on the second day of illness, in addition to this pallor, it commenced to have a greenish cast. I then rushed it to the children's hospital realizing that the condition was an anemia. An immediate transfusion was performed. The blood picture was aplastic anemia with no evidence of regeneration of red blood cells (no immature forms found), and hemoglobin 20 per cent. The child died in twenty-four hours. Is it safe for these parents to have other children? Can the history of the first birth be linked with the second as a similar and hereditary condition? Would earlier treatment have been effective?

M D, Ohio.

ANSWER.—The clinical descriptions and the blood examinations mentioned in the query are not sufficient to permit definite differential diagnosis as to the nature of the anemia. One recognizes several forms of familial anemia in new-born infants.

First there is the rarely occurring congenital, aplastic anemia, in which the blood shows no tendency to regeneration, red cells are diminished, there is a leukopenia, with relative increase of lymphocytes, and the blood platelets are markedly diminished. The bone marrow is white, composed of fat.

Second, sickle cell anemia may cause a hemolytic anemia, or the characteristic changes in the shape of the cells may be found without anemia. This variety occurs most commonly among Negro children, in many of whom the sickling remains latent. When the disease is active it tends to run a protracted course. Patients who are ill with this form of anemia are subject to intercurrent infections during which a severe anemia occurs.

Third, primary hemolytic anemia (familial hemolytic jaundice) is characterized by severe anemia, varying degrees of jaundice, large spleen, and increased fragility of the red cells in the presence of hypotonic salt solutions. This form of combined anemia and icterus may occur in successively born babies.

In this connection, too, must be mentioned familial icterus gravis, which affects several babies of the same family successively. The infant as a rule becomes violently ill within twenty-four or thirty-six hours after birth, with increasing jaundice. The condition terminates fatally with convulsions in a few days, though the disease may last for weeks, and some recoveries have been reported.

Whether it is safe for these parents to have other children cannot be answered categorically. Without doubt there is a definite hazard for the next baby, though cases of familial icterus gravis are recorded in which one or two normal infants have been born and remained well while several others have died. From what has been said it is probable that the two infants died of the same disorder. In rapidly progressive cases of familial icterus gravis no form of treatment has been of any avail.

## SYPHILITIC OPTIC ATROPHY

To the Editor—I have a patient who has optic atrophy (syphilitic) in one eye with some pallor of the disk and vision of 20/25. The field extends out about 30 degrees (for 18/360 mm object). The other eye is normal in vision with a slight concentric contraction of the peripheral limits of the field. He has been treated for several months for a syphilitic infection. During the treatment the peripheral limits of vision became contracted. What is the best preparation to use for general infection when an optic atrophy or optic neuritis is present?

WENDELL L. HUGHES, M D, Hempstead, L I., N. Y.

ANSWER.—The use of arsenicals in the treatment of syphilitic optic atrophy should be stopped at the first sign of constriction of the peripheral fields. Even tryparsamide is not recommended when such a condition exists. Most men are using bismuth compounds intramuscularly. For the optic atrophy E. Stastnik (*Ceskol ofthal.* 1:114, 1934) recommends the use of gold chloride. A. Busacca (*Klin. Monatsbl. f. Augenh.* 90:352 [March] 1933) reported on the use of sulfur in this condition, and B. Fleischer (*Klin. Monatsbl. f. Augenh.* 90:335 [March] 1935) reported favorable results with fever therapy.

L. L. Mayer and R. D. Smith (*Illinois M. J.* 65:258 [March] 1934) reported the study of a series of cases treated with tryparsamide, and N. K. Lazar (*Arch. Ophthalm.* 11:240 [Feb] 1934) reported a similar series treated with neoarsphenamine. Retrobulbar injections of atropine sulfate have also been used but favorable results have not occurred. The safest, and preferable, medication is a bismuth compound intramuscularly.

## DIFFERENTIAL DIAGNOSIS OF GONORRHEAL ARTHRITIS

To the Editor—A man, aged 36, a Spaniard, whose previous history was negative except for gonorrhea about fifteen years ago, in May 1911 developed pain in the right heel and a stiff neck, which disappeared with sodium salicylate. The temperature at the time was 103 F., the pulse 120. Since then he has had migrating pains in all the joints of the body but no fever. Physical examination is always negative as to swelling, tenderness, murmurs, temperature and pulse rises. His pains have not been relieved by salicylates since the first attack. The patient is an etcher of glass, using hydrofluoric acid and hydrochloric acid. He works alternate weeks and has noticed that after working (standing for eight hours), the pains begin in the heel and then migrate to the joints (large and small). The weeks that he does not work he feels better. He has had diathermy, salicylates and has just had 2 cc. of a preparation containing 20 mg of colloidal sulfur intravenously twice weekly for six weeks with the result that the pains are less severe. Is there anything else that I can do for the patient? Has the old gonorrhea anything to do with his arthritic pains? Has his occupational use of the hydrofluoric acid any factor in his case? Please omit name.

M D, New York

ANSWER.—Though the case sounds most like that of a focal infection, no mention is made of studies for such conditions, hence it is impossible to discuss it categorically. While gonorrhea may or may not have been a factor in the production of a chronically infected prostate, there is not the remotest likelihood of the case being one of gonorrheal arthritis after such a lapse of time. Search of teeth, tonsils, prostate and, possibly, the gastro-intestinal tract might reveal an underlying cause. Obviously the exciting cause is postural. Underlying all there probably is some perversion of physiologic function that favors early fatigue as well as focal infections.

So far as his contacts with hydrofluoric and hydrochloric acids are concerned they apparently can be disregarded. Inquiry among those who for years have employed glass etchers fails to reveal a single case of arthritis among them.

Treatment apparently rests in correction of perverted physiologic function, removal of foci of infection, correction of postural defects, rest in the unemployed periods and possibly muscle strengthening exercises.

## SIGNIFICANCE OF CHANGES IN BLOOD PRESSURE

To the Editor—A man aged 40, was rejected for life insurance because of a blood pressure of 190 systolic, 130 diastolic. The systemic history and physical examination were negative except for low grade auricular fibrillation. The past history was absolutely negative except for a frequent intense pulsating headache, generally distributed over the head. On a prescription of sodium nitrite one-half grain (0.03 Gm.) glyceryl trinitrate 1/50 grain (0.0004 Gm.) and sodium bromide 3 grains (0.2 Gm.) four times a day, the blood pressure one week later was 170/140, without headache. The Mosenthal test was negative, and the cardiac rhythm was regular. One week later the blood pressure was 155/145. I have discontinued the prescription for a while. Why should the diastolic pressure approach the lowering systolic, and what may result from this low pulse pressure? Kindly omit name.

M D, Pennsylvania

ANSWER.—The rise in diastolic pressure is of ominous import, particularly if it persists. The diminishing pulse pressure resulting from the reduction of the systolic tension implies a weakening myocardium, which is asthenic and no longer fully competent. Such an interpretation would be confirmed by a rising pulse rate; the pulse rate is not mentioned in the query. The rise in diastolic pressure may have been secondary to the diminished pulse pressure because of histanoxia of the cerebral vasomotor centers, or it may possibly be attributed to a paradoxical reaction to nitrites. The dose of nitrites was rather large. Burgess and others have reported a secondary rise in diastolic tension occurring after the preliminary fall on administration of glyceryl trinitrate or amyl nitrite. The more probable explanation is the former. The effects of hypertension are due to maldistribution of this, that or another vital parenchymatous tissue. The capillary circulation rather than being increased by hypertension is grossly diminished by arteriolar constriction. It should be emphasized that the site of the increased resistance responsible for the diastolic hypertension is in the arterioles, proximal to the capillaries.

An amyl nitrite test (Stieglitz, E. J.: Arterial Hypertension, *Arch. Int. Med.* 46:227 [Aug.] 1930) might prove most illuminating in this instance. If extensive arteriolar sclerosis already exists (as evidenced by failure of the diastolic tension to fall

greatly on inhalation of amyl nitrite), vasodilator or any other medication will and can accomplish but little and treatment must be then directed toward maintaining the cardiac vigor. The cardiac nutrition must be considered as of primary importance and an adequate supply of dextrose and oxygen assured; anemia, which is common in hypertensive arterial disease, requires energetic treatment.

#### SCARRING AFTER TONSILLECTOMY

*To the Editor:*—Some one has attempted to prove recently that the tonsil has no real capsule and that, in removing it, one dissects it out of the fascia separating it from the muscle structures adjacent. If this is true, it might offer a partial explanation for the fact that in many cases in spite of what appears to have been good surgery there has been contracture, scarring or obliteration of the pillars. If the tonsil has no capsule and is merely attached by fascia, this would appear to be an after-effect that would be difficult to avoid in many cases, owing to the contractures in the contour of the tonsil fossa in the process of healing. I have looked into many throats, especially of children, and found the condition. It also occurs in adults in whom a careful inspection immediately following operation shows no apparent injury to the pillars. Is the "disappearance," "absorption" or "destruction" of the pillars following tonsillectomy always the result of faulty technic? Please omit name.

M.D., Missouri.

*ANSWER:*—The statements concerning the so-called capsule of the tonsil are substantially correct. What is designated as the "capsule" is in reality that part of the fascia covering the superior constrictor muscle which clings to the tonsil following its removal.

As to scarring after tonsillectomy, it is probably true that part of the time the ill effects observed are due to faulty technic and that part of the time with the best of technic the scarring is due to individual peculiarities in healing. As most people do not complain, failure to get a cosmetically perfect result following a proper tonsillectomy is of no practical significance.

#### OTOSCLEROSIS

*To the Editor:*—A woman, aged 28, gave birth to a child seven years ago. During the third month of this pregnancy she began to complain of head noises and impaired hearing. As the years have passed, her hearing has become progressively worse. This condition has been diagnosed by different ear specialists as otosclerosis. They have advised various forms of treatment. Despite it all, her condition is growing worse. The patient is very anxious to have another child despite the possibility of a pregnancy exaggerating her illness. In view of the fact that she may become worse whether she is pregnant or not, should she be allowed to become pregnant again? Kindly advise me as to any form of treatment that you think may improve or check this condition. If there are any special references which you think are of any value in treating this condition, please advise me. Please omit name.

M.D., New York.

*ANSWER:*—From the history as given and from the fact that the hearing has become progressively worse the diagnosis of otosclerosis, especially if it has been confirmed by functional tests of hearing, is probably correct. There is today no treatment for the cure of otosclerosis or for the palliation of the condition. It is quite true that without becoming pregnant the patient may suffer a further loss in hearing. It is also true that she need not necessarily become more deaf if she becomes pregnant again. The choice as to a second pregnancy, in the opinion of many men, would lie entirely with the patient, as she is the one who makes the sacrifice. Furthermore, if she is already so deaf that unaided by a device she cannot hear normal conversation, whatever impairment the next pregnancy might produce will not make a great deal of practical difference.

#### SENSITIZING AGENT IN RHUS POISONING

*To the Editor:*—I was told recently that the etiologic agent producing dermatitis venenata was the same in all the members of the genus *Rhus*; that is, that if an individual was sensitive to *Rhus toxicodendron* he would also be sensitive to *Rhus diversiloba*, *Rhus vermicifera*, and so on. My informant was unable to state the source of his information. Do you know of any work done to substantiate this?

C. RUSSELL ANDERSON, M.D., Canby, Minn.

*ANSWER:*—The opinion of investigators on the subject is that the active ingredient of all the species is a phenolic resin, "toxicodendrol," contained in the sap obtained when the plant is injured. Authorities state that this substance is identical or very similar in all the *Rhus* species. Investigation has shown that 0.001 mg. applied to the skin results in severe vesiculation. Members of the group in which this has been found are *Rhus toxicodendron*, *Rhus diversiloba* and *Rhus vernix*. Complete literature and discussion can be found in: McNair: *Rhus Dermatitis*, University of Chicago Press, 1923; Pfaff: *J. Exper. Med.* 2:181, 1897; Ford, W. W.: *Centralbl. f. Bakt.* 58:129, 1913.

#### RADIODERMATITIS

*To the Editor:*—I have a patient who is suffering from a severe dermatitis involving the complete right pectoral region. It is erythematous, vesicular and angiomatous, and it causes a great deal of itching. The patient was operated on for cancer on that side twelve years ago, when a complete mastectomy was done, followed by roentgen therapy. Do you believe that there is a relationship between the present dermatitis and the roentgen therapy given twelve years ago, and also what is the proper therapy?

M.D., New York.

*ANSWER:*—The description is that of a radiodermatitis appearing as a sequel to intensive roentgen therapy administered after the mastectomy. The present dermatitis has probably existed in mild degree associated with atrophy, telangiectasia and some pigmentation for some time and has probably become more acute recently because of local irritating factors.

While soothing lotions and bland ointments are effective, more recently excellent results have been obtained through the application of aloe vera in the form of the leaves (Collins, C. E., and Collins, Creston: *Am. J. Roentgenol.* 33:396 [March] 1935. Wright, C. S.: Aloe Vera in the Treatment of Roentgen Ulcers and Telangiectasis, *THE JOURNAL*, April 18, p. 1363).

#### DISABILITY AFTER ABDOMINAL OPERATION

*To the Editor:*—I should like to know what the accepted time is before a man returns to work after he has had an abdominal operation. In other words, after a man has had an abdominal operation, what is the accepted time of disability before he should return to work, or just how long should he refrain from working so as not to injure his side?

M.D.

*ANSWER:*—There is no generally accepted period for disability following an abdominal operation.

It is not unusual for a person to return to office work in from three to four weeks. Light work may often be permitted in from four to six weeks. If one must return immediately to heavy work, two months is usually advised. The extent of the operation, condition of the patient, type of incision, occurrence of minor or major complications and various other factors may prolong the period of disability.

#### DIARRHEA FOLLOWING USE OF GALLBLADDER DYE PREPARATION

*To the Editor:*—Quite frequently when a tetraiodophenolphthalein preparation is given orally, and with the proper preparation, that is, a fat-free diet and no cathartic, the patients will present themselves the following morning stating that they have had a severe diarrhea since taking the dye. Roentgen examination of the gallbladder reveals no concentration. What condition or conditions will produce this diarrhea, and what is the most common cause? Is there any way to prevent subsequent administrations of the dye from producing the same results? Please omit name.

M.D., Missouri.

*ANSWER:*—Diarrhea following gallbladder dye preparations is due to the essentially cathartic nature of the phenolphthalein radical. Patients who give this reaction should receive a preliminary dose of powdered opium 0.060 Gm. or tincture of opium 1 cc., which will prevent the diarrhea and secure retention of the dye and its concentration in the gallbladder.

#### CLIMATIC TREATMENT OF BRONCHITIS

*To the Editor:*—A boy, aged 9 years, is susceptible to acute bronchitis. Would North Carolina be a good climate for him? His bronchitis is rather nonproductive—that is, he does not bring up much phlegm. What towns or states would be best for him and especially as to North Carolina? Please omit name.

M.D., Chicago.

*ANSWER:*—A locality in North Carolina known for its equable temperature would doubtless be beneficial. A place farther south, as in Florida, might offer more advantages. The Southwest is especially desirable because of its dry climate. The change of location, as well as other treatment, will depend on just what the "bronchitis" is. In children, a granular pharyngitis is a frequent cause, and such a condition does well in the Southwest.

#### MEASUREMENTS OF PREGNANT UTERUS

*To the Editor:*—Will you please inform me as to the metric measurements of a two months pregnant uterus of a primipara? I am unable to find this information from any of my medical books. The woman weighs about 120 pounds (54 Kg.).

FRANK A. RENDE, M.D., Bottineau, N. D.

*ANSWER:*—The nonpregnant uterus generally measures from 6.5 to 7 cm. In a primipara, at the end of a two months gestation, the length of the uterus is approximately 9 to 9.5 cm.



## Medical Examinations and Licensure

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**MINNESOTA** *Basic Science* Minneapolis, June 2 3 Sec, Dr J Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis *Medical* Minneapolis, June 16 18 Sec, Dr Julian F Du Bois, 350 St Peter St, St Paul

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**WASHINGTON** *Basic Science* Seattle, July 9 10 *Medical* Seattle, July 13 15 Dir, Department of Licenses, Mr Henry C Huse Olympia

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### Minnesota January Examination

Dr Julian F Du Bois, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held in Minneapolis, Jan 21-23, 1936 The examination covered 12 subjects An average of 75 per cent was required to pass Fifty-two candidates were examined all of whom passed Two physicians were licensed by reciprocity and 3 physicians were licensed by endorsement The following schools were represented

School	PASSED	Year Grad	Per Cent
Stanford University School of Medicine	(1931) 88 6	(1932)	83 1
George Washington University School of Medicine	(1933)	(1933)	89 1
Loyola University School of Medicine	(1935)	(1935)	83
Northwestern University Medical School	(1912) 76 3, (1934)	(1934)	87 89 3
Rush Medical College	(1934) 84 3	(1934)	90 5
School of Medicine of the Division of the Biological Sciences	(1931)	(1931)	83 6
University of Illinois College of Medicine	(1935)	(1935)	88 1
Indiana University School of Medicine	(1934)	(1934)	90 2
Tulane University of Louisiana School of Medicine	(1933)	(1933)	91
(1934) 85 3			
Johns Hopkins Univ School of Medicine	(1931) 88 2, (1935)	(1935)	86 5
Harvard University Medical School	(1931)	(1931)	88 3
University of Michigan Medical School	(1933)	(1933)	84 5
University of Minnesota Medical School	(1933)	(1933)	82 5
(1934) 78 6, 89 6, 90, (1935) 80 4, 83 6,* 84 4, 84 6 *			
85 1,* 85 3, 85 5, 88 2,* 88 4 * 88 5,* 93 *			
St Louis University School of Medicine	(1933)	(1933)	87 4
University of Missouri School of Medicine	(1903)	(1903)	96 1
University of Buffalo School of Medicine	(1921)	(1921)	83 1
University of Cincinnati College of Medicine	(1934)	(1934)	91 4
Jefferson Medical College of Philadelphia	(1934)	(1934)	90 6
Temple University School of Medicine	(1933) 87 3,	(1933)	88 5
University of Pennsylvania School of Medicine	(1932)	(1932)	88 3
89 5, (1933) 87, 87 3, 88 2, 89 1			
University of Pittsburgh School of Medicine	(1933)	(1933)	90 1
Vanderbilt University School of Medicine	(1933)	(1933)	88 1
Baylor University College of Medicine	(1931)	(1931)	86
Medical College of Virginia	(1934)	(1934)	90 3
Dalhousie University Faculty of Medicine	(1933)	(1933)	85
McGill University Faculty of Medicine	(1935)	(1935)	88 2

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Nebraska College of Medicine	(1934)	(1934)	Nebraska
Jefferson Medical College of Philadelphia	(1921)	(1921)	Penna

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
University of Minnesota Medical School	(1935) N B M Ex	(1935)	N B M Ex
Washington University School of Medicine	(1934) N B M Ex	(1934)	N B M Ex
University of Pennsylvania School of Medicine	(1933) N B M Ex	(1933)	N B M Ex

\* This applicant has received the M B degree and will receive the M D degree on completion of internship

### Washington January Examination

Mr Harry C Huse, director, Department of Licenses, reports the written examination held in Seattle, Jan 13-15, 1936 The examination covered 17 subjects and included 70 questions An average of 75 per cent was required to pass Twenty-one candidates were examined, 20 of whom passed and 1 failed Ten physicians were licensed by reciprocity and 5 physicians were licensed by endorsement after an oral examination The following schools were represented

School	PASSED	Year Grad	Per Cent
University of Southern California School of Medicine	(1935)	(1935)	86
George Washington University School of Medicine	(1935)	(1935)	83
Georgetown University School of Medicine	(1925)	(1925)	82
Northwestern University Medical School	(1935) 82	(1935)	88 *
Rush Medical College	(1933) 88	(1933)	84
School of Medicine of the Division of the Biological Sciences	(1935)	(1935)	81
University of Louisville School of Medicine	(1934)	(1934)	83
University of Minnesota Medical School	(1935)	(1935)	83
St Louis University School of Medicine	(1934)	(1934)	82
Creighton University School of Medicine	(1935) 78, 80	(1935)	78, 80
Western Reserve University School of Medicine	(1928)	(1928)	86
University of Oregon Medical School	(1931)	(1931)	87,
(1934) 89, (1935) 83			
Hahnemann Medical College and Hosp of Philadelphia	(1933)	(1933)	86
(1934) 85			
Jefferson Medical College of Philadelphia	(1934)	(1934)	85

School	FAILED	Year Grad	Per Cent
Rush Medical College	(1933)	(1933)	69

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
College of Medical Evangelists	(1929)	(1929)	California
Bennett Medical College Chicago	(1912)	(1912)	Iowa
Loyola University School of Medicine	(1930)	(1930)	Montana
State University of Iowa College of Medicine	(1934)	(1934)	Iowa
University of Nebraska College of Medicine	(1934)	(1934)	Nebraska
University of Oregon Medical School	(1934, 2)	(1934, 2)	Oregon



Vanderbilt University School of Medicine.....	(1930)	Tennessee
University of Virginia Department of Medicine.....	(1931)	Virginia
University of Wisconsin Medical School.....	(1932)	Oregon

School	LICENSED BY ENDORSEMENT	Year Endorsement Grad. of
College of Medical Evangelists.....	(1935)	N. B. M. Ex.
Harvard University Medical School.....	(1932), (1934, 2)	N. B. M. Ex.
University of Oregon Medical School.....	(1933)	N. B. M. Ex.

\* This applicant has received the M.B. degree and will receive the M.D. degree on completion of internship.

## Book Notices

**The International Labour Organisation and Social Insurance.** International Labour Office, Studies and Reports, Series M (Social Insurance), No. 12. Paper. Price, \$1.50; 5s. 6d. Pp. 219. New York: World Peace Foundation; Geneva, 1936.

This is a continuation of previous studies and reports. It summarizes developments in social insurance throughout the world. The various conventions that instructed the International Office to support social insurance are given. The report is prefaced by an argument in favor of such insurance. Legislation in the various countries on workmen's compensation, sickness insurance, invalidity, old age, widows' and orphans' insurance and on migrant workers' pensions are listed according to date in various countries. The section on sickness insurance notes (p. 51) that "the principal object is now to restore health and working capacity, and first place is therefore given to medical, surgical and pharmaceutical benefits." The function of compensation has given way to that of restoration. There is no discussion of the fitness of institutions organized as dispensaries of cash benefits to become administrators of medical care. The attitude on the relations of insurance carriers to the medical profession is seen by the statement that the International Conference (p. 54) "did not go into the matter of medical fees, but the precautions it took to protect insurance institutions against exaggerated demands show that it was aware of the need for organizing the medical service of insurance institutions on rational and economical lines." There is no suggestion that the quality of the medical service needed to be protected or of the possibility of the deterioration of such a system under insurance. This report with the preceding ones in the same series forms the largest compilation of source material on social insurance throughout the world.

**A Square Deal for the Narcotic Addict.** By William H. Ladue, M.D., Attending Physician, Champlain Valley and Physicians Hospitals, Plattsburgh, New York. Paper. Price, \$1. Pp. 131. Plattsburgh, New York: The Author, 1935.

According to the author this little volume was written for the purpose of initiating discussion on the narcotic drug addiction situation in America, with special relation to its proper placement among our social problems. He dedicates his book by a quotation from Sir Arthur Helps, "The world will tolerate many vices but not their diminutives." This quotation may imply that the author regards drug addiction as a diminutive or insignificant vice. It is evident, however, that this implication is unjust, for he states in the preface that "Drug addiction is a large problem. A thorough knowledge of it belongs to the future. Enough information, however, is at hand to warrant one in asking for a review of the Narcotic Drug Laws. . . . In the stand taken, the author differs with those who hold that narcotic drug addiction is a menace of such magnitude and imminence as to warrant drastic laws to check it. Statistical data are offered to show that the narcotic drug evil in contrast with that of alcohol is of minor importance."

There is evidence throughout the book that the author finds fault with the disproportionate emphasis being placed on drug addiction as a problem in the United States in comparison with chronic alcoholism. He uses this analogy as the principal theme for "A Square Deal for the Narcotic Drug Addict." The fact that chronic alcoholism constitutes a medicosociological problem of some magnitude that is condoned and neglected without concerted efforts being made to formulate or adopt a public policy for a solution is in itself no justification for "A Square Deal for the Narcotic Addict." The analogy that the so-called menace of narcotic drug addiction has been

exaggerated cannot justify that this medicosociological problem should be condoned in the same manner as chronic alcoholism is condoned, since two wrongs can never make a right.

The author rightly condemns those individuals and groups of individuals who use the so-called drug addiction menace as a means for aggrandizing themselves, bringing themselves into the limelight or using propaganda to promote their political preferment or the collection of funds to combat drug addiction.

The author quotes as an appendix to his book a "Digest of Essential Features Required in a State Narcotic Defense Law," which he calls in his text "The Uniform Narcotic Law."

The Uniform Narcotic Law was recommended by the Commissioners of Uniform State Laws, endorsed by the American Medical Association, the Bureau of Narcotics, the United States Public Health Service, and the American Bar Association. The draft of the Uniform State Narcotic Law was the result of many conferences and studies extending over a period of some five years. Whereas the author presumably leaves the impression that he reviews the narcotic laws, he seems not to have knowledge of the good work that has been undertaken by the Commissioner on Uniform State Laws.

The text is a clerical compilation, with many errors of omission and commission. There is no index.

**Chronic Rheumatism: Causation and Treatment.** By R. Fortescue Fox, M.D., F.R.C.P., F.R.Met.S., President of the International League Against Rheumatism, and J. van Breemen, M.D., Honorary Secretary of the International League Against Rheumatism. Cloth. Price, 12s. 6d. Pp. 364, with 46 illustrations. London: J. & A. Churchill, Ltd., 1934.

The distinguished authors of this book are the president and the secretary of the International League Against Rheumatism, the organization which above all others can claim responsibility for the amazing increase of interest in rheumatic diseases that has been aroused throughout the world during the last ten years. Those familiar with the range of their activities and the breadth of their experiences will expect from these authors not just another book on rheumatism but one different from all others. They will not be disappointed. The title, however, is a little misleading. The scope of the book is not as broad as the title would indicate. Its information is of a more special sort. Its chief concern is the physiologic alterations underlying chronic rheumatism and the rationale of their treatment by physical therapy. The authors stress the great value of physical therapy simply because they believe that, of a large number of forms of treatment which they have used, physical therapy gives by far the best results.

It is unfortunate that physicians in this country utilize physical therapy only meagerly, in spite of the fact that years, even centuries, of experience have shown it to be perhaps the most effective measure in the treatment of chronic rheumatism. American physicians do not prescribe physical therapy because they themselves know so little about its principles and technic, because there are so few trained physical therapists available to help the physician out, or because they somehow hesitate to use a remedy "soiled" by the touch of irregular practitioners. There are available several good books which explain in detail the indications and methods of physical therapy, but the average physician is not interested. There are a number of good clinical handbooks on rheumatic diseases but generally when the author, who is usually a clinician, reaches the chapter on therapy he dismisses the important subject of physical therapy by a few broad if glowing generalities. This book represents one of few examples that bridge the gap between physical therapy books, which the average doctor does not buy, and clinical handbooks on rheumatic diseases, of which there is beginning to be a plethora.

The authors discuss in detail disturbances in circulatory function which they believe underly "the rheumatic diathesis" and are responsible for the first symptoms of rheumatism. The skin is an organ of many functions and is that organ through which physical therapy acts. Whereas the majority of spa physicians, in this country at least, are notable for their inarticulateness and for their willingness to remain content merely with the fact that physical therapy helps the patient without explaining why it helps, the authors of this book go much further. They are not physical therapists but are clinicians who have used physical therapy to its greatest advantage yet have always kept the clinical point of view. Thus they tell so

far as possible why certain kinds and amounts of physical therapy help and why certain others do not. The result is a book that is decidedly clinical and useful for general practice.

On the debit side are certain sins of omission, none the less regrettable because admitted by the authors. Data on pathology and bacteriology and on many current forms of treatment are either omitted entirely or are hardly more than mentioned. Chapter VI discusses various "clinical pictures" that describe various types of chronic rheumatism. Some of the subdivisions of chronic rheumatism mentioned and apparently accepted by the authors as established entities are not generally acceptable to rheumatologists, mainly because the clinical and pathologic bases for them have not been adequately described. The authors do nothing to clarify these underdeveloped pictures, such as "climacteric" or menopausal arthritis, or tuberculous rheumatism. The case reports used to represent such entities are inadequate to make clear why the authors have accepted them.

Certain expressed views are definitely at variance with the opinion of the majority of physicians of even as wide experience as the authors; for example, the declaration that Heberden's nodes, so commonly seen in elderly women, are a definite expression of female gout. Not a few statements are baldly made and have little or no evidence to support them; for example, the assertion that vaccine ought not to be used simultaneously with physical measures or spa treatments, or that rhizomelic spondylosis is definitely of infectious origin, especially gonorrheal and tuberculous. In subsequent printings two changes should certainly be made. References are generously supplied, but their presentation does not conform to standard methods; many, indeed the majority, are incomplete. The year of a book's publication, the city where it was published, the volume number, the year of publication or the pagination of articles frequently is omitted. The index should certainly be amplified; many important topics that are discussed in considerable detail are not listed in the index. Thus the book loses much of its value as a reference work.

Among the most valuable parts of the book are chapters dealing with comparative nomenclature (English, American, German, French), rheumatism as an international social problem of the greatest magnitude, rheumatism in industry, the treatment and prevention of industrial rheumatism, suggestions for the establishment of rheumatism centers and treatment clinics, and suggestions for the development of local and international research. These chapters include data valuable to the physician charged with the executive responsibility of managing an arthritis clinic, a hospital service, a research investigation, or a spa practice for rheumatism patients.

**Transactions of the American Philosophical Society for Promoting Useful Knowledge, Held at Philadelphia. New Series—Volume XXVII: Anatomy of the Rat.** By Eunice Chace Greene. Cloth. Price, \$5. Pp. 370, with 339 illustrations. Philadelphia: The American Philosophical Society, 1935.

The rat is perhaps the animal most commonly used for experimental work at the present time and often by individuals who possess an inadequate knowledge of its structure. This book was designed to serve as "a reference book or atlas for research workers, instructors and advanced students in comparative anatomy." There are approximately 125 pages of text description, the remaining pages carrying the well executed illustrations and captions. Many of the illustrations occupy a full page and more than 180 of them carry one, two or three colors to designate distribution of arteries, veins and nerves among the viscera and muscles. The text as well as the illustrations was executed by the author from personally dissected specimens. Minute anatomic detail for muscles, bones and ligaments of appendages and even digits, as well as individually separated bony elements of the skull indicate the extensiveness of the remarkably clear illustrations. The brain is treated from external gross details and not by brain slices or sections. Microscopic anatomy is not included for any parts. The book is a beautifully executed atlas and will prove a welcome and valuable reference for anatomic details of the rat. It can be recommended to any one interested in or having to do with the details of anatomy of this widely used mammal and is naturally decidedly applicable to the study of anatomy of other small animals.

**Études neurologiques.** Par Georges Guillaín, professeur de clinique des maladies du système nerveux à la Faculté de médecine de Paris. Sixième série. Boards. Price, 80 francs. Pp. 433, with 108 illustrations. Paris: Masson & Cie, 1935.

This book is the sixth of a series written by Guillaín on neurologic studies. He has written in addition five other books on neurologic subjects. All the material of this edition was studied and worked up in the clinic at the Salpêtrière. There are seven chapters. The first is on cerebral tumors and is subdivided into thirteen parts. In this chapter the author discusses tumors in almost every part of the brain. The second chapter deals with pathology of the brain and describes in detail four conditions: astereognosis and trauma to the parietal cortex, atrophic necrosis of the parietal and occipital convolutions, astereognosis (bilateral), and Claude Bernard-Horner syndrome in a case of thalamic syndrome. The third chapter deals with pathologic changes in the cerebral peduncles, pons, medulla oblongata and cerebellum. The fourth chapter is on pathologic conditions in the spinal cord and contains nine subdivisions. The fifth chapter contains a study of certain paralyzes of the external popliteal nerve, meralgia paresthetica and a study of the spinal fluid Lange test in diphtheritic paralysis. The sixth chapter consists of a study of the course in myotonia atrophica. The seventh chapter pleads for the necessity of more scientific research for the further progress of neuropsychiatry. This is an excellent textbook for neuropsychiatrists and neuropathologists.

**An Index of Differential Diagnosis of Main Symptoms.** By Various Writers. Edited by Herbert French, C.V.O., C.B.E., M.D., Consulting Physician to Guy's Hospital. Fifth edition. Leather. Price, \$16. Pp. 1145, with 742 illustrations. Baltimore: William Wood & Company, 1936.

An essential feature of this book is the index, which comprises about 319 pages and has been prepared with meticulous care, so as to include numerous subjects and questions that might arise in making a differential diagnosis. These references in the index, of course, refer to the reading pages in the front of the book, in which the particular symptom or physical sign is discussed with relation to the diseases that may cause it. Another notable feature of the book is the large number of well selected illustrations, of which 196 are colored. Among the nineteen English contributors to the preparation of the book are some names that are well known throughout the civilized world. This book would seem to be especially useful to physicians who are removed from medical libraries or the larger hospitals and who may find themselves with some obscure condition to diagnose. The previous edition of the book was reviewed in *THE JOURNAL*, Jan. 19, 1929. The present edition has been made necessary by the many new diagnostic tests devised since the previous edition was published, by the improvement in the technic of established methods of diagnosis and by the fact that in those few years such diseases as tularemia and psittacosis have become more common. The original purpose of the book was to help in making a correct diagnosis in a case in which one or more symptoms are pronounced and yet the real nature of the disease is not clear. That it serves the purpose well is indicated by the fact that some 53,000 copies of the book have been printed since 1912.

**The Bacteriological Grading of Milk.** By G. S. Wilson, Assisted by R. S. Twigg, R. C. Wright, C. B. Hendry, M. P. Cowell and I. Mafer. Medical Research Council, Special Report Series, No. 206. Boards. Price, 7s. 6d. Pp. 392, with 29 illustrations. London: His Majesty's Stationery Office, 1935.

Bacteriologists, public health officers and others will be interested in this report. It is the result of a comprehensive laboratory investigation on bacteriologic methods for testing and grading milk. The authors were concerned chiefly with providing data for conclusions as to the relative value of current testing methods. They collected considerable evidence which shows—that most American workers are thoroughly cognizant of—that the plate count is subject to considerable experimental error. According to the data presented, an allowance of plus or minus 90 per cent or more may have to be made for any one count. In addition to being inaccurate, the plate count method is complex, expensive and, owing to the practice of

recording insignificant figures, gives a false sense of accuracy. The authors recommend that it be abandoned in the routine examination of raw milks. Other methods of testing milk were examined. The coliform test was judged inadequate. As a simple, inexpensive procedure by which the grading in terms of the content of living bacteria can be reliably performed, a modified methylene blue test is recommended. It is claimed to have only 5 per cent of the variability found with the plate count test. The modification essentially consists of the use of rubber stoppered tubes for the milk and standard methylene blue solution, in place of tubes with cotton plugs. This permits inversion of the tubes at intervals of half an hour. Before being inverted they are examined and the end point is taken when the milk is completely decolorized or decolorized up to within 5 mm. of the surface. The investigators found that the modified technic resulted in a marked diminution in the reduction time of good grades of milk and gave an end point that was easily read.

Comparison of the plate count and modified methylene blue reduction test was made on a large series of different grades of milk. Standards are suggested for grade A and certified milks. The authors point out that only two divisions need be made on the basis of cleanliness; namely, milk that is suitable and milk that is not suitable for human consumption. Laboratory workers may find this volume of additional interest because of the detailed description of technic and the statistical treatment of experimental observations.

**The Hospital Yearbook: A Reference Book on Planning, Equipment, Administration and Purchasing.** Fourteenth edition. Cloth. Price, \$2.50. Pp. 505. Chicago: Modern Hospital Publishing Company, Inc., 1935.

Those who are familiar with this annual publication will find this edition more complete than any previous issue. It is a book of reference for hospital executives. Aside from the condensed and yet comprehensive helps in hospital buying, it covers many features in hospital organization and administration. Several pages are devoted to the purchase of equipment and supplies, covering adequately almost every department. The chapter on organization analyzes the division of work, the jobs and the qualifications of the personnel required for each position. Among the other chapters may be mentioned those on qualifications of the administrator, functions of a women's auxiliary, serving the patient, hospital accidents, budgets, accounting, insurance, decoration and furnishing and food service. The chapter on minimum hospital standards is a collection of the official standards issued by medical organizations, starting with the American College of Surgeons and the American Medical Association and including the requirements of other organizations of standing having to do with the operation of hospitals or parts of hospitals and ending with a comprehensive list of hospital and medical associations. The final chapter is a glossary of hospital terms.

**Semiología radiológica de la aurícula izquierda.** Por Oscar F. Noguera, médico del servicio central de radiología del Hospital Alvarez. Boards. Pp. 87, with 48 illustrations. Buenos Aires: Agencia medica sud-americana, 1935.

The x-rays afford the only means of observing individually the different chambers of the heart and their changes of form and situation and of delineating the different compartments of the heart whatever may be their situation. Borderline cases of difficult diagnosis necessitate the most exact methods, which are correlated with other measurements of the body, such as the procedure of Fray in the left anterior oblique position for the determination of the increase in size of the left and the right ventricle. Verification of the total size in cases of definite cardiac enlargement is of secondary importance. The most important determination is whether the chambers of the heart are hypertrophic or dilated. For this purpose one may have recourse to careful x-ray study in different positions, based on known landmarks, such as the clear retrocardiac space, the angle of bronchial divergence and the esophagus. The radiologic study of the left auricle is of special importance because, in addition to its great clinical interest, it permits recognition of even slight increase in size, a thing that is not possible with other cavities of the heart. The high percentage of cases in which disturbances of the mitral valve figure make even more

important the use of the x-rays. The book is divided into the essentials of topographic anatomy of the left auricle, the radiologic study of the normal left auricle, the mitral configuration of the heart, increase of size of the left auricle, visualization of the esophagus, the angle of divergence and the right bronchovertebral angle, pulmonary venous stasis, radiologic aspects of auricular fibrillation, the left auricle as a mediastinal tumor, and determination of ventricular hypertrophy by the procedure of Fray.

**Surgery: Queen of the Arts and Other Papers and Addresses.** By William D. Haggard, M.D., F.A.C.S., D.C.L., Professor of Clinical Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee. Foreword by William J. Mayo. Cloth. Price, \$5.50. Pp. 389, with 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1935.

This book is a compilation of some thirty addresses selected from a hundred and fifty delivered by the author before various medical and surgical societies in this country, of many of which he has been the president. The scope of the volume is broad. It includes, in addition to sketches of historical development, discussions of the achievements of some of the pioneers in American medicine, eulogies of medical men and surgeons whose names are now famous, lectures on the ideals of medicine as a whole, and a number of scientific papers and clinics on subjects with which the author has become familiar through years of active hospital and private practice. As the addresses were prepared for special occasions, they naturally reflect the mood suitable for the specific purpose. They are sincere, forceful and full of knowledge, wisdom and philosophy, clearly and at times beautifully expressed. Above all they are inspirational and worth reading.

**Chirurgie de l'oreille, du nez, du pharynx et du larynx.** Par Georges Laurens. Avec la collaboration de Maurice Aubry, laryngologiste des hôpitaux de Paris. Third edition. Cloth. Price, 150 francs. Pp. 1,075, with 794 illustrations. Paris: Masson & Cie, 1936.

This is the third completely revised edition of the well known work by Georges Laurens, with the collaboration of Maurice Aubry. After some general statements regarding the operative preparation, anesthesia and hemostasis, the actual surgery of the ear, nose, pharynx, larynx and esophagus is detailed in seven parts, each of which is again subdivided into many chapters. The whole subject has been brought to date, the newer procedures having been incorporated in this new edition. In each instance the various steps in the different operations are given in sequence, and usually with illustrations showing clearly the complete technic. The work is almost encyclopedic in character, is well organized, is written clearly, is profusely illustrated and is most informative. As a text and reference work it will prove of inestimable value to all who are able to read French. But even to those who are not masters of this language, much information might be obtained by simply studying the illustrations, particularly those showing the various steps of the mastoid and laryngeal operations. Without doubt, this volume is a valuable addition to the literature of operative otolaryngology.

**Typebestemmelse ved retsmedicinske pletundersøgelser.** Af Frederik Therkelsen. [Type Determination in Medicolegal Examination of Stains.] Paper. Pp. 158, with 34 illustrations. Copenhagen: Levin & Munksgaard, 1935.

This thesis, submitted for the doctor's degree at the University of Copenhagen, deals with the methods and value of determining the group-specific elements in spots and stains of human blood and semen as well as saliva. From extensive and thorough experimental tests under a great variety of conditions the author has developed efficient methods for the determination of the group-specific substances in such materials. In twenty-four of forty-six examinations in actual instances the type of the blood or seminal spot was determined satisfactorily and in several cases the information thus obtained proved to be of practical medicolegal value. The main results of the extensive investigations, which will interest all who are concerned with type diagnosis for medicolegal purposes, are summarized in German at the end of the dissertation. There can be no question of the desirability of making type determination of stains and spots a regular part of medicolegal laboratory work.

## Bureau of Legal Medicine and Legislation

### MEDICOLEGAL ABSTRACTS

**Accident Insurance: Epidemic Encephalitis as Totally Disabling a Physician**—The Massachusetts Accident Company promised to pay certain weekly benefits to the plaintiff, a physician, if he should suffer a disability from accidental injury or disease which necessarily, wholly and continuously disabled him from the performance of any and every kind of duty pertaining to his occupation. The physician developed epidemic encephalitis, an inflammatory disease of the brain, with Parkinson's syndrome. He had a disturbance of his gait characterized by walking with short steps in a shuffling manner with a propulsion tendency to fall forward. In walking, he held his arms rigidly to his side. He had a marked tremor which involved to some degree his entire body, but more particularly the left arm and leg, the head and tongue. His speech was slurry and indistinct. There was impairment of fine movements as characterized by difficulty in picking up a pin. There was definite impairment of coordinated movements. He had uncontrollable spasms of the eyelids with an associated rolling upward of the eyeballs. There was considerable rigidity of the left arm and leg. At times he had attacks of laughing or crying, which occurred without sufficient provocation. The insurance company paid the specified weekly benefits from June 1933 to Feb 5, 1935, but thereafter stopped further payments. The physician then sued the company for the unpaid benefits, and from a judgment of the trial court for the plaintiff the company appealed to the Supreme Court of New Jersey.

The plaintiff, prior to his disablement, had a large general and obstetric practice, treating approximately 140 patients a week. He was also a surgeon. A neurologist testified "My opinion is that he (plaintiff) is totally incapacitated from carrying on professionally both as a physician and as a surgeon." The company contended that the plaintiff was not totally disabled within the terms of the policy during the period for which benefits were not paid because he had treated some seven patients, gave a hypodermic injection to one patient, wrote about fourteen prescriptions and kept up his offices, which were in his home. The plaintiff admitted that he had treated about four patients a day during that period, but treated only those patients, he said, "which I could handle very easily." The language of an insurance policy, said the Supreme Court, must be construed in a manner most advantageous to the insured without doing violence to the wording. The meaning of the language "any and every kind of duty pertaining to his occupation or business" is "not that he [assured] must be so disabled as to prevent him from doing anything whatsoever pertaining to his occupation, but that, if he be so disabled as to prevent him from doing any and every kind of business pertaining to his occupation, he was entitled to recover." *Gross v Comm Cas Ins Co of Newark, N J*, 90 N J Law, 594, 101 A 169. From the evidence in the present case, the court could find no reason for disturbing the judgment of the trial court for the plaintiff—*Teitelbaum v Massachusetts Accident Co (N J)*, 181 A 395.

**Accident Insurance: Septicemia Following Picking of Intranasal Pimple**—The defendant insurance company insured the deceased against "loss or disability resulting directly, independently and exclusively or all other causes, from bodily injuries effected solely through accidental means." The insured opened a pimple or boil within his nose, with a knife or needle. Inflammation set in at or near the puncture, septicemia followed and the insured died. At the trial of a suit brought by the beneficiary under the policy, there was preponderating evidence to show (1) that the death was produced by staphylococci which were originally confined in the boil or pimple but which, as a result of the insured's act, entered the blood stream, and (2) that it was not usual for septicemia to follow the puncturing or bruising of a boil or pimple. Judgment was entered for the beneficiary, and the insurance company appealed to the Supreme Court of Appeals of Virginia.

The question to be determined, said the Supreme Court of Appeals, is whether or not the injuries resulting in the insured's death were effected by accidental means and fall within the coverage clause of the policy. We think, said the court, that the jury's verdict was based on competent evidence and is conclusive that the insured's death was not the natural or probable consequence of his puncturing the boil or pimple but came about unexpectedly and by chance. There is no proof that he knew that such an act would produce such dire consequences. The court affirmed the judgment for the beneficiary—*Ocean Accident & Guarantee Corporation v Glover (Va)* 182 S E 221.

**Malpractice: Choice of Methods of Treatment**—The patient in this case consulted the defendant, a dentist, for treatment of an abscessed tooth, which the dentist extracted. The infection became generalized and the patient died. The plaintiff as administratrix of the patient's estate, sued the dentist and from a directed verdict against her, she appealed to the Supreme Judicial Court of Massachusetts.

The dentist testified that two methods of treatment were available to him, a palliative one to reduce the inflammation before extracting, and immediate extraction. The former method, he testified, was the usual practice in 1921 when he commenced his practice but since that time the latter method had become recognized as good practice. There was danger in the adoption of either method, he said. There was no evidence of negligence, in the opinion of the Supreme Judicial Court, unless the dentist's decision to extract the infected tooth constituted negligence. Apparently holding that this did not constitute negligence, the court upheld the trial court in directing a verdict for the dentist—*Carlen v Gaw (Mass)*, 198 N E 606.

## Society Proceedings

### COMING MEETINGS

- American Association for the Study of Goiter, Chicago, June 8-10 Dr W Blair Mosser, 133 Biddle St, Kane, Pa, Corresponding Secretary
- American Association for the Study of Neoplastic Diseases, Baltimore, June 11-13 Dr Eugene R Whitmore, 2139 Wyoming Ave NW, Washington, D C, Secretary
- American Bronchoscopic Society, Detroit, May 27 Dr Lyman Richards, 319 Longwood Ave, Boston, Secretary
- American Dermatological Association, Swampscott, Mass, June 4-6 Dr Fred D Weidman, Medical Laboratories, University of Pennsylvania, Philadelphia, Secretary
- American Gynecological Society, Absecon N J, May 25-27 Dr Otto H Schwarz, 630 S Kingshighway Blvd, St Louis, Secretary
- American Laryngological Association, Detroit, May 25-27 Dr James A Babbitt, 1912 Spruce St, Philadelphia, Secretary
- American Neurological Association, Atlantic City, N J, June 1-3 Dr Henry A Riley, 117 East 72d St, New York, Secretary
- American Ophthalmological Society, Hot Springs, Va, June 1-3 Dr J Milton Griscom, 255 South 17th St, Philadelphia, Secretary
- American Otological Society, Detroit, May 28-29 Dr Thomas J Harris, 104 E 40th St, New York, Secretary
- American Pediatric Society, Bolton Landing, N Y, June 11-13 Dr Hugh McCulloch, 325 North Euclid Ave, St Louis, Secretary
- American Physiotherapy Association, Los Angeles, June 28-July 2 Miss Jefferson I Brown, Tichenor Hospital School, Long Beach, Calif, Secretary
- American Society for the Hard of Hearing, Boston, May 26-30 Miss Betty C Wright, 1537 35th St N W, Washington, D C, Secretary
- California Medical Association, Coronado, May 25-28 Dr F C Warnshuis, 450 Sutter St, San Francisco, Secretary
- Conference of State and Provincial Health Authorities of North America, Vancouver, B C, June 22-23 Dr A J Chesley, State Department of Health, St Paul, Minn, Secretary
- Maine Medical Association, Rangeley, June 21-23 Miss Rebekah Gardner, 22 Arsenal St, Portland, Secretary
- Massachusetts Medical Society, Springfield, June 8-10 Dr Alexander S Begg, 8 The Fenway, Boston, Secretary
- Medical Library Association, St Paul, June 22-24 Miss Janet Doe, 2 E 103d St, New York, Secretary
- Montana Medical Association of Billings, July 8-9 Dr E G Balsam, 208 1/2 North Broadway, Billings, Secretary
- New Hampshire Medical Society, Manchester, May 26-27 Dr Carleton R Metcalf, 5 S State St, Concord, Secretary
- New Jersey Medical Society of Atlantic City, June 2-4 Dr J B Morrison, 66 Milford Ave, Newark, Secretary
- Pacific Northwest Medical Association, Portland Ore, July 7-10 Dr C W Countryman, 407 Riverside Avenue, Spokane, Wash, Executive Secretary
- Rhode Island Medical Society, Providence, June 3-4 Dr J W Leech, 167 Angell St, Providence, Secretary
- Society of Surgeons of New Jersey, Orange, May 27 Dr Walter H Mount, 21 Plymouth St, Montclair, Secretary
- Texas State Medical Association of Houston, May 25-28 Dr Holman Taylor, 1404 W El Paso St, Fort Worth, Secretary
- West Virginia State Medical Association, Fairmont, June 8-10 Mr Joe W Savage, Public Library Bldg, Charleston, Executive Secretary.

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### American Journal of Cancer, New York

26: 483 702 (March) 1936

- \*Intrathoracic Sympathoblastoma Producing Symptomatology of a Superior Pulmonary Sulcus Tumor (Pancoast) T T Frost and S E Wolpaw, Cleveland—p 483
- \*Study of Fifty Seven Cases of Bronchogenic Carcinoma R S Rosedale and D R McKay, Buffalo—p 493
- Carcinoma of Urinary Bladder Evaluation of Surgery and Irradiation in Treatment of This Disease J R Andrews and C A W Uhle, Philadelphia—p 507
- Clinical Experiments on Effect of African Snake Venoms on Human Cancer Cases With or Without Concomitant Deep Therapy M des Ligneris and E Grasset, Johannesburg South Africa—p 512
- Isolation of Pure Strains of Cells from Human Tumors I Selection of Specimens and Technique H Pinkus Ann Arbor, Mich—p 521
- Value of Macronucleolus in the Cancer Problem W C MacCarty, Rochester, Minn—p 529
- Is There a Seasonal Factor Influencing Development of Tar Tumors in Mice? L Kreyberg and S S Nielsen, Oslo Norway—p 533
- Observation of Primary Tumors of Pituitary, Ovaries and Mammary Glands in a Mouse W U Gardner, L C Strong and G M Smith, New Haven, Conn—p 541
- Relation of Hypophysis to Growth of Malignant Tumors III Effect of Hypophysectomy on Autogenous Tumors H A Ball, San Diego, Calif, and L T Samuels, Los Angeles—p 547
- Development of Multiple Tumors in Mice Part III Results of Ingestion of Carcinogenic Agents Preliminary Report M C Reinhard and C F Candee, Buffalo—p 552
- Reaction of Spontaneous Mouse Tumors to Cystine Disulfoxide By the Staff of the Lankenau Hospital Research Institute, Philadelphia—p 554
- Intra Uterine Fibrosarcoma of the Foot Case Report O C Hudson, Mineola, N Y—p 568
- Adenoma of Parotid Salivary Gland Onkocyte Tumor G E Gruenfeld and L H Jorstad St Louis—p 571
- Thymoma in Chicken (Gallus Domesticus) W H Feldman Rochester, Minn—p 576
- Absorption of X Rays by Sperm and Erythrocytes and Its Relation to Susceptibility of Tissues to X Rays A Marshak and V L Bollman, Pasadena Calif—p 581
- Tumors of Oral Mucous Membrane C F Geschlechter, Baltimore—p 586
- Relation of the Internist to the Cancer Problem J M Swan, Rochester, N Y—p 608

**Intrathoracic Sympathoblastoma**—Because of the unusual type of tumor, Frost and Wolpaw add a case to the group of cases of superior pulmonary sulcus tumor presenting the clinical features enumerated by Pancoast. Consideration of the gross features of the tumor leads them to presume that the tumor arose external to the lung and extended into it. The tumor in this case fulfils the criteria for a tumor arising from the sympathetic nervous system and the degree of differentiation justifies the diagnosis of sympathoblastoma. It is thought to have arisen from the inferior cervical sympathetic ganglion. No tumors described in the literature have the exact histologic characters of this tumor, because they have occurred in purer form, the sympathogonoma, the sympathoblastoma, the pheochromocytoma and the ganglioneuroma. The situation near the neck is that next in order of frequency to the adrenal. The moderate degree of malignancy is in harmony with the approach to the more mature type of cell. Horner's syndrome and invasion of the brachial plexus with arm pain and muscular weakness were both present. A small, dense homogeneous mass was found at the right apex. Although the available roentgenograms showed no destruction of ribs or spine, their involvement was revealed at necropsy. The necropsy material in the literature is reviewed and indicates that the clinical syndrome which has been described under the name of superior pulmonary sulcus tumor cannot be attributed to a specific pathologic entity but may be caused by various tumors arising near the thoracic inlet.

**Bronchogenic Carcinoma**—Rosedale and McKay declare that in the last ten years 466 cases of malignant disease were examined post mortem at the Buffalo City Hospital, of which

bronchogenic carcinoma constituted 75 per cent. In their district the tumor appears to predominate in people employed in irritating atmospheric conditions. Histologically the tumors consisted of various predominant cell types. Round or spindle cells were found in all cases. The regional lymph nodes were involved in all cases. Clinically the symptoms produced by these tumors closely simulate other diseases of the lungs, such as tuberculosis, pneumoconiosis and bronchiectasis. Roentgenographic study may be of aid in differentiating between the several diseases simulating tumor, but in the presence of secondary pulmonary or pleural pathologic conditions the diagnosis may not be suspected. Bronchoscopy with removal of tissue for microscopic examination is a most valuable procedure. The authors feel, from the study of their material, that bronchogenic carcinoma occurs frequently enough for it to enter the differential diagnosis of all obscure diseases of the chest in persons more than 30 years of age.

### American J. Digestive Diseases and Nutrition, Chicago

3: 182 (March) 1936

- Personality Study in Cardiospasm The Meaning of the Disorder from the Standpoint of Behavior E Weiss Philadelphia—p 1
- Epigastric Percussion in Peptic Ulcer J Meyer and J S Golden, Chicago—p 6
- Anemia Following Gastric Operations H Lublin, Stockholm, Sweden—p 8
- Incidence of Malignancy in Gastric Ulcer H C Chang, Peiping, China—p 10
- The Double Histamine Test as an Aid in Study of Gastric Secretory Function A B Rivers, A E Osterberg and Frances R Vanzant, Rochester, Minn—p 12
- Phytobezoar with Visualization by Means of Gastroscopy H J Moersch and W. Walters, Rochester, Minn—p 15
- Functional Abdominal Distention Simulating Megacolon J A Barger, A W Adson, J S Lundy and C F Dixon, Rochester, Minn—p 17
- \*Pyogenic Skin Lesions Accompanying Chronic Ulcerative Colitis Report of Five Cases I R Jankelson and B F Massell, Boston—p 19
- Is Phenolphthalein Harmful? Z v Vamossy, Budapest, Hungary—p 22
- Prophylactic Value of Gastric Mucin in Therapy of Postoperative Jejunal Ulcer Experimental Study in Dogs J R Orndorff, G B Fauley and A C Ivy, Chicago—p 26
- Studies of Pepsin in Human Gastric Juice III Physiologic Aspects A E Osterberg, Frances R Vanzant, W C Alvarez and A B Rivers, Rochester, Minn—p 35
- \*Permeability to Egg Albumin in Peptic Ulcer Possible Test for Activity of Peptic Ulcers Preliminary Report M B Marks, Chicago—p 41
- Influence of Fruit Ingestion Before Meals on Bacterial Flora of Stomach and Large Intestine and on Food Allergies O Bergeim, A Hanszen and L Arnold Chicago—p 45
- Newer Interpretations of Gallbladder Function and Their Diagnostic and Therapeutic Application M Feldman and S Morrison, Baltimore—p 52
- Clinical Results in Medical Treatment of Chronic Ulcerative Colitis E D Kiefer, Boston—p 56
- Review of Seven Hundred and Forty Six Gastric and Duodenal Ulcers J W Hinton, New York—p 59
- Electrocholecystocasis Preliminary Report L R Whitaker, Boston—p 62
- Technic of the Local Injection of Saline Solution for Relief of Pruritus Ani W J Schatz and V Sprengel, Allentown, Pa—p 63

**Pyogenic Skin Lesions in Chronic Ulcerative Colitis.**—Jankelson and Massell have seen five patients who, in the course of ulcerative colitis, developed ulcerations of the skin. This complication, though uncommon, is often difficult to control. In one of these cases it was directly responsible for death. The five cases have much in common. All occurred in chronic idiopathic ulcerative colitis during the height of an acute exacerbation. All presented a febrile reaction, toxicity and diarrhea with watery stools containing mucus, blood and pus. The two patients who had an ileostomy showed mucopurulent-sanguineous rectal discharges. In none of these cases could either Barger's organism or *Endamoeba histolytica* be isolated. Bacillary dysentery was excluded by negative cultures and specific agglutination tests. Cultures of smears taken from the base of the ulcers in the sigmoid in three cases yielded various organisms. The organisms were *Staphylococcus aureus*, *Staphylococcus albus* and the hemolytic streptococcus either separately or together, but there is no evidence as to whether these were the primary cause of the lesions or secondary invaders. In two of three cases the same organisms were found in the skin lesions as in the ulcers of the intestinal mucosa. This suggests the possibility of a metastatic origin of the skin infection. A lowered resistance to infection seems

to play an important part in the etiology of these skin ulcerations, whether caused by organisms that get into the skin by direct invasion or carried there by the blood stream from the diseased colon. In instances in which recovery took place, improvement in the skin ulcerations accompanied improvement of the general condition of the patient. The cutaneous lesions varied in severity. In some cases they were merely punched out ulcerations or redness, swelling and induration without abscess formation; in other cases there were multiple distinct abscesses. The amount of colon involved does not seem to bear any relation to the severity of the cutaneous infection. The early lesions often resemble toxic diseases of the skin. Their course, however, is not typical and in most cases pyogenic infection occurs. The treatment of the pyogenic infections of the skin in the course of an ulcerative colitis is largely symptomatic: incision and drainage of single abscesses, heat—dry or moist—in the punched-out ulcerations. In the one case in which autogenous vaccine was tried, the results were apparently excellent. Whatever management will cause a remission of the chronic ulcerative colitis will contribute to the healing of the pyogenic infection of the skin.

**Permeability to Egg Albumin in Peptic Ulcer.**—Marks declares that individuals without gross lesions in the mucosa of the upper portions of the alimentary tract do not give the egg white precipitin test in the urine, excepting in 20 per cent of cases that might possibly be considered to have given a false positive result. Patients with active peptic ulcers, whether located in the stomach or the duodenum, have yielded the precipitin reaction in 75 per cent of the cases. This might be considered to introduce a possibility of a 25 per cent false negative reaction. All but 20 per cent of patients with healed peptic ulcer gave a negative reaction. In spite of the possibility of false positive and false negative reactions in a certain proportion of cases, it seems that the test may be of value as corroborative evidence of the probable presence or absence of active peptic ulcer or other lesions of the mucous membrane in the upper portion of the digestive tract, and in differentiation from gallbladder and other diseases producing similar clinical pictures.

### American Journal of Diseases of Children, Chicago

51: 499-764 (March) 1936

Letterer Siwe's Disease. Splenohepatomegaly Associated with Wide spread Hyperplasia of Nonlipoid Storing Macrophages. Discussion of So Called Reticulo Endotheloses. A F Abt and E J. Denenholz, Chicago—p 499

\*Changes in Lung Volume During Treatment with Artificial Pneumothorax for Lobar Pneumonia. Report of Three Cases. G E Lindskog, P. Harper and I. Friedman, New Haven, Conn—p 523

Treatment of Lobar Pneumonia in Children by Artificial Pneumothorax. P. Harper, Bridgeport, Conn—p 536

Immune Reactions Induced in Infants by Intestinal Absorption of Incompletely Digested Cow's Milk Protein. V. W. Lippard, O M. Schloss and Priscilla A. Johnson, New York—p 562

Mental Deterioration Associated with Convulsions and Hypoglycemia. Report of Two Cases. D C Darrow, New Haven, Conn—p 575

\*Changes in Rate of Human Fetal Heart in Response to Vibratory Stimuli. L. W. Sontag and R. F. Wallace, Yellow Springs, Ohio—p 583.

Substances Involved in Coagulation of Blood of the New Born. V. Prothrombin Quantitative and Qualitative Studies of Platelets in Normal Infant. Eleanor I. Leslie, Evanston, Ill., and H. N. Sanford, Chicago—p 590

Further Studies of Viosterol in Prophylaxis of Rickets in Premature Infants. L. T. Davidson and Katharine K. Merritt, New York, and S. S. Chipman, Norwalk, Conn.—p. 594.

**Lung Volume During Treatment with Artificial Pneumothorax for Pneumonia.**—Lindskog and his co-workers observed the volume of the lungs in its component parts in three cases. A comparison of the initial determinations of the subtidal volume of the lungs and the final values recorded during the convalescence indicates that the subtidal volume is considerably reduced during the early stages of lobar pneumonia. In case 1, although the initial roentgenogram showed little evidence of infiltration, the reduction in subtidal volume was 20 per cent. There was also a significant reduction in the mean tidal exchange, this being in association with an accelerated respiratory rate. The introduction of measured amounts of air into one pleural space was followed by a decrease in the subtidal volume of the lungs, but less quantitatively than the volume of air introduced. Likewise the withdrawal of air in measured quantities from an existing pneumothorax caused

a rise in the subtidal volume, but less than the amount of air withdrawn. When large volumes of air are introduced into the pleural cavity, there is an increase in the size of the chest, which can be demonstrated physically and by roentgen measurements. There is also a drop in the level of the diaphragm toward the inspiratory position. Shifts in the mediastinum and pleural adhesions may be complicating factors. A redistribution of the volume of blood in the pulmonary fields and the large venous reservoirs of the mediastinum must likewise be considered. The physiologic adjustments following the introduction of large volumes of air into the thorax act in a direction to preserve a subtidal (functional residual) volume sufficient to the needs of the patient at the expense of the complementary air, which is drastically reduced.

**Changes in Rate of Fetal Heart.**—Sontag and Wallace made 217 experiments between one day and 127 days before delivery on eight pregnant women; there was an average increase of  $11.2 \pm 0.47$  beats per minute in the fetal heart rate following the application to the mother's abdomen of vibratory stimuli of a frequency of 120 beats per second. This change in heart rate was distributed according to months. It was increased from an unreliable decrease of  $0.07 \pm 1.52$  beats per minute during the fifth month before birth to an average increase of  $14.3 \pm 0.74$  beats per minute during the last month before birth. This increase was greater than the increase due to fetal movement. There were two cases, representing seventy-nine experiments, in which no movement response to the stimulus occurred, but in which a reliable increase in heart rate did occur. There is a total of fifty-seven experiments in which no movement occurred during the first minute following stimulation. The fetal heart rate underwent an average increase of  $6 \pm 1.11$  beats per minute. This response may prove of value as an index of intra-uterine development.

### American Journal of Hygiene, Baltimore

23: 205-430 (March) 1936

Relation of Physical Defects to Physical Growth of Children in Different Geographic Regions of the United States. Physical Measurement Studies Number Four. W. M. Gafaster—p 205

Incidence and Distribution of *Ascaris Lumbricoides*, *Trichuris Trichiura*, *Hymenolepis Nana* and *Hymenolepis Diminuta* in Thirty Six Counties in Kentucky. A. E. Keller and W. S. Leathers, Nashville, Tenn—p 216

Preservation of Bacteria by Drying in Vacuo. E. Lefson, Baltimore—p 231

Resistance of Rats to Infection with *Nippostrongylus Muris* Following Administration of Worms by Duodenal Tube. L. A. Spindler, Washington, D. C.—p 237

Experimental Studies on Human and Primate Species of *Strongyloides*. V. Free Living Phase of Life Cycle. T. de V. Beach, New Orleans—p 243

Relationship Between Viruses of Infectious Myxoma and Shope Fibroma of Rabbits. K. E. Hyde, Baltimore—p 278

Decline of Malaria in Region of East Macedonia Owing to Diminished Rainfall. M. A. Barber; J. B. Rice, Paris, France, and V. G. Valaoras—p 298.

Experimental Immunity to Virus of Mumps in Monkeys. C. D. Johnson and E. W. Goodpasture, Nashville, Tenn—p 329

Synchronicity, Periodicity and Length of Asexual Cycle of *Plasmodium Rouxi* in the Canary. Fruma Wolfson—p 340

Studies on Schistosome Dermatitis. I. Present Status of Subject. W. W. Cort, Baltimore—p 349

Id. II. Morphologic and Life History Studies on Three Dermatitides Producing Schistosome Cercariae, C. Elvae Miller, 1923, C. Strynecolae N. Sp., and C. Phyllae N. Sp. S. B. Talbot—p 372

Id. III. Observations on Behavior of Dermatitides Producing Schistosome Cercariae. W. W. Cort, Baltimore, and S. B. Talbot—p 384

Laboratory Diagnosis in Trichinosis. Lucy S. Heathman, Minneapolis—p 397.

\*Experimental Infections of Rats with *Endamoeba Histolytica*. F. O. Atchley, Baltimore—p 410

Effect of Fresh Implants of Hypophysis and of Certain Extracts from Its Anterior Lobe on Walker's Rat Carcinoma Number 256. R. E. Gardner, Baltimore—p 415

Immunity to Virus Myxomatosis as Affected by Port of Entry. R. R. Hyde, Baltimore—p 425

**Experimental Infections with *Endamoeba Histolytica*.**—Atchley inoculated strains of *Endamoeba histolytica* by mouth from the wild rat and from man into laboratory rats. Almost 50 per cent of the inoculations of wild rat material were successful, eight of seventeen rats being positive later. Only 13 per cent (four of thirty) of the rodents given the amoeba from human carriers became infected. Cysts (human material) were observed in only one experimental animal and then at examination one month following inoculation. As a result of repeated attempts to infect twelve young wild rats



raised in the laboratory, one light infection was obtained. One very light colonization was observed subsequent to attempts to inoculate six laboratory rats intracably with *Endamoeba histolytica* trophozoites from cultures. No symptoms and no pathologic changes were observed in any case, either in four naturally infected wild rats (tissue sections) or during the experimental work. Of six kittens inoculated with the ameba from the wild rat, two became positive, although *Endamoeba histolytica* was not demonstrated microscopically within the tissues.

### American Journal of Medical Sciences, Philadelphia

191:453-596 (April) 1936

- \*Effect of Liver Extract on Small Intestine of Patients with Sprue. D. K. Miller and C. P. Rhoads, New York.—p. 453.
- Acute Basophilic Leukemia. W. A. Groat, T. C. Wyatt, Stella M. Zimmer and Rachael E. Field, Syracuse, N. Y.—p. 457.
- Resistance of Reticulocytes to Hypotonic Solutions of Sodium Chloride and of Plasma. Geneva A. Daland and L. Zetzel, Boston.—p. 467.
- \*Sickle Cell Anemia: New Cause of Cor Pulmonale: Report of Two Cases with Numerous Disseminated Occlusions of Small Pulmonary Arteries. W. M. Yater and G. H. Hansmann, Washington, D. C.—p. 474.
- Electrocardiogram in Fever: Changes in Induced Hyperpyrexia. H. Vesell and W. Bierman, New York.—p. 484.
- Strength Duration Curves of Overexcitable and Underexcitable Nerve Muscle Apparatus and Some Consequences Bearing on Clinical Application of Chronaximetry. F. H. Lewy, Philadelphia.—p. 491.
- \*Is Use of Insulin Indicated in the Elderly Diabetic with Coronary Sclerosis? W. S. Collens, R. G. Stoliarsky and S. Netzer, Brooklyn.—p. 503.
- Present Views of Calcium Phosphorus Metabolism. G. Wagoner, Philadelphia.—p. 511.
- Observations on Etiologic Relationship of Vitamin B ( $B_{12}$ ) to Polyneuritis in the Alcohol Addict. N. Jolliffe, C. N. Colbert and P. M. Joffe, New York.—p. 515.
- Study of Diuretic Effect of Mercupurin in Man. A. C. DeGraff, J. E. Nadler and R. C. Batterman, New York.—p. 526.
- Differentiation of Colored Cerebrospinal Fluids. F. H. Robinson and B. N. Miller, Durham, N. C.—p. 538.
- Early Pulmonary Tuberculosis and Its Diagnosis. R. H. Stiehm, Madison, Wis.—p. 542.

**Effect of Liver Extract on Intestine of Patients with Sprue.**—Miller and Rhoads observed that flatulence, intestinal discomfort, cramps and diarrhea recurred in patients having had sprue unless a sufficiently large amount of liver extract was administered at frequent intervals. This was the case despite the fact that no detectable hematologic disturbance was present. Thus the intestinal dysfunction rather than the anemia has been the guide for the administration of therapy. The fact that the amount of liver extract necessary to prevent recurrence of intestinal dysfunction was far greater than that necessary to maintain normal blood levels suggested that a relationship existed between liver extract and intestinal activity. The results of the roentgenologic study of an individual case furnish unequivocal evidence of the specificity of liver extract therapy of the intestinal manifestations of sprue without anemia.

**Sickle Cell Anemia as Cause of Cor Pulmonale.**—Although many patients with sickle cell anemia die at a relatively early age of some intercurrent infection, particularly pneumonia and tuberculosis, some die apparently of the anemia itself. Yater and Hansmann believe that cardiac failure is often a part of the terminal picture. Their experience with two cases leads them to believe that there is something other than the severe anemia producing the cardiac failure; namely, hypertension of the lesser circulation due to numerous occlusions of the medium size and small pulmonary arteries with subsequent hypertrophy and failure of the right side of the heart. In one case the heart failure was acute and manifested by orthopnea, great enlargement of the liver and dilatation of the heart. In the other, heart failure was not suspected clinically because of absence of orthopnea, but the liver became greatly swollen. The cause of the right heart strain in the first case was thrombotic occlusions of the small and medium size arteries of the lungs, with organization and canalization of discrete thrombi, which had formed from time to time. The heart failure was apparently precipitated by a final crop of fresh thromboses. The cause of the right heart failure in the second case was thickening of the walls of the small and medium size arteries and the arterioles of the lungs with reduction in their lumens, but thromboses were not present in the tissue studied. Right heart failure due to vascular changes in the lungs must be common in cases of sickle cell anemia,

since many of the patients have enlarged hearts, systolic murmurs and hepatomegaly. Capillary stasis due to distortion and agglutination of erythrocytes is probably the essential factor in the changes described in the small arteries. Changes in the nervous system are described in the first case, among which are the same lesions in the choroid plexus as are seen in the spleen in cases of advanced sickle cell anemia. The changes in the bone marrow differed from those previously reported in that they also were similar to those observed in the spleen.

**Insulin and Diabetic Patients with Coronary Sclerosis.**—The observations of Collens and his associates are not in accord with the clinical reports of Parsonnet and Hyman, who have indicated that anginal symptoms are frequently aggravated in the insulin-treated cases even when the blood sugars are normal. They feel that harm has been done by introducing the concept that insulin has a deleterious effect on the heart of the elderly diabetic patient. It is the hypoglycemic attack which is fraught with danger, but, if it is possible to obviate the toxic effect of this hormone, it should not be discarded as dangerous. Insulin is a double-edged sword: given in therapeutic doses it produces remarkable therapeutic effects; given in toxic doses it can even kill. Methods for adequately protecting patients against the toxic effects of insulin are presented. Insulin has been found to have a remarkable therapeutic value for the relief of cardiac pain of the diabetic patient. It would be of considerably greater importance to determine the sugar content of the blood three and four hours after insulin has been injected in order to decide whether the patient is hypoglycemic. It is the lack of this type of observation that has led to what the authors consider false conclusions.

### American Journal of Pathology, Boston

12:141-282 (March) 1936

- Direct Bacteriologic Experimentation on Living Mammalian Fetus. O. C. Woolpert, Chicago.—p. 141.
- Intracerebral Inoculation of Fetal Guinea-Pigs with Bacille Calmette-Guérin and the  $H_{27}$  Strain of Tubercle Bacillus. I. S. Neiman and O. C. Woolpert, Chicago.—p. 153.
- Susceptibility of the Guinea-Pig Fetus to Vaccinia. J. Stritar and N. P. Hudson, Chicago.—p. 165.
- Susceptibility of the Guinea-Pig Fetus to Submaxillary Gland Virus of Guinea-Pigs. F. S. Markham and N. P. Hudson, Chicago.—p. 175.
- Pericardial Lesions in Rheumatic Fever. C. K. Friedberg and L. Gross, New York.—p. 183.
- \*Subclinical Adenoma of Pituitary Gland. R. T. Costello, Rochester, Minn.—p. 205.
- Nuclear Alterations Following Intravenous Injections of Glucose and of Other Solutions. J. Lee, St. Louis.—p. 217.
- Dermatomyositis: Report of Two Cases with Complete Autopsy. A. Wolf and S. L. Wilens, New York.—p. 235.
- Spontaneous Leukemia and Chloroleukemia in the Rat. S. L. Wilens and E. E. Sprout, New York.—p. 249.
- Mitral Stenosis with Interauricular Insufficiency. S. Sailer, New York.—p. 259.
- \*The Brains of Infants and Children in Relation to Postmortem Time, Toxicity and Convulsive State. C. R. Tuthill, Staten Island, N. Y.—p. 269.

**Subclinical Adenoma of Pituitary Gland.**—Costello bases his remarks on the study of 1,000 pituitary glands obtained over a period of years in the course of routine postmortem examinations. Of the glands examined, 225 were found to contain one or more adenomas. In 224 of these glands, excluding one with multiple adenomas, there were found to be 265 adenomas. These adenomas were classified as follows: chromophobic, 140; eosinophilic, twenty; basophilic, seventy-two, and mixed types, thirty-three. In an endeavor to find the age group in which adenomas occurred most frequently, the ages of subjects with adenomas were plotted against the age curve for the 1,000 subjects in the whole series. The youngest subject in whom adenomas were found was 2 years old; the oldest was 86 years old. The greatest incidence of adenomas occurred in the sixth decade of life. Of the 225 patients in whom adenomas were found, 148 were male and seventy-seven were female. Since the proportion of males to females in the 1,000 cases was 63 to 37 per cent, it can be seen that the incidence in the two sexes is about equal. The clinical diagnoses and causes of death in the 1,000 cases ranged through almost the entire list of medical and surgical conditions. In the 225 cases in which adenomas were found, the same variability in clinical observations and causes of death was apparent. There was nothing in the history or clinical observations in any case in which an adenoma was found to suggest the presence of any



pituitary dysfunction. This is startling, since in a few cases the adenomas were so large as almost to destroy the gland. Apparently, however, there was sufficient normal tissue remaining to sustain normal pituitary function. This would justify the term "subclinical adenoma" as applied to them. It is possible, however, that under the influence of an unknown stimulus some of these adenomas may secrete a hormone or similar substance capable of producing symptoms.

**Study of Brains of Children.**—Tuthill examined the brains of thirty-four children from 12 days to 4 years of age who died from the usual diseases of childhood. Brains from cases of acute infections, second degree burns, allergy and lead poisoning did not show changes in the ganglionic cells that could be attributed to toxicity. The loss of cytoplasm and the density of its stain, the tingeing of the nerve tissue, the hyperchromatosis of the nuclei and the perivascular spaces varied somewhat with age and the fixative, but chiefly with the post-mortem time. The indications of toxic injury were found rather in the reactions of the microglia and the macroglia. The most severe and frequent lesions in the brains were those produced by the vascular disturbances of the convulsive state that accompany many diseases of infancy and young childhood.

### Anatomical Record, Philadelphia

64: 413-544 (March 25) 1936

- Cytologic Study of Digestive System of Anuran Larvae During Accelerated Metamorphosis. L. Kaywin, New York.—p. 413.  
Studies on Growth of Human Nervous System: IV. Material Illustrating Postnatal Growth and Topography of Basal Nuclei. M. B. Hesdorffer and R. E. Scammon, Minneapolis.—p. 443.  
Seasonal Sexual Activity and Its Experimental Modification in Male Sparrow, *Passer Domesticus* Linnaeus. A. Kirschbaum and A. R. Ringoen, Minneapolis.—p. 453.  
Effects of Estrin Injections on Accessory Reproductive Organs of Male Ground Squirrel (*Citellus Tridecemlineatus*). L. J. Wells, Columbia, Mo.—p. 475.  
Method of Illuminating Living Structures for Microscopic Study. M. H. Knisely, Chicago.—p. 499.  
Study of Thyroid in Embryos of *Eleutherodactylus Nubicola*. W. G. Lynn, Baltimore.—p. 525.

### Annals of Internal Medicine, Lancaster, Pa.

9: 1171-1286 (March) 1936

- Long Standing Cases of Auricular Fibrillation with Organic Heart Disease: Some Clinical Considerations. W. A. Evans, Boston.—p. 1171.  
\*Etiology of Abdominal Pain in Diabetic Acidosis. H. Walker, Richmond, Va.—p. 1178.  
Intensive Liver Therapy in Sprue. P. Corr, Riverside, Calif.—p. 1182.  
Localization of Site of Experimental Premature Contractions and Bundle Branch Lesions by Means of Multiphase Chest Leads. J. Weinstein and D. I. Abramson, Brooklyn.—p. 1187.  
Effectiveness of Acetyl-β-Methylcholine Given by Mouth as Vasodilating Agent. Grace A. Goldsmith, Rochester, Minn.—p. 1196.  
\*Blackwater Fever: Clinical Review of Fifty-Two Cases. M. Fernán-Núñez, Milwaukee.—p. 1203.  
\*Treatment of Narcolepsy with Benzedrine Sulfate. H. Ulrich, C. E. Trapp and B. Vidgoff, Boston.—p. 1213.  
Abdominal Distention in Lobar Pneumonia. J. Goldman and A. Cohen, Philadelphia.—p. 1222.  
Role of Accidental Puncture of Veins in Production of Allergic Shock. G. L. Waldbott and M. S. Ascher, Detroit.—p. 1232.  
Schiller, the Greatest of the Medical Poets. L. H. Roddis.—p. 1240.

#### Etiology of Abdominal Pain in Diabetic Acidosis.

Walker declares that the usual signs, symptoms and laboratory observations in prediabetic coma are well known, but the picture is occasionally complicated by symptoms and signs referable to the abdomen which may make it difficult or impossible to determine whether the patient has an intra-abdominal surgical lesion or whether the symptom complex from which the patient is suffering is due entirely to acidosis. A case of this complex syndrome is cited. A differential diagnosis cannot be made without making qualifications. McKittrick states that these patients before operation always suggested some widespread abdominal pathologic process as the cause of the abdominal pain. In diabetic coma, vomiting usually precedes pain, while in precoma cases with surgical complications pain usually precedes vomiting—particularly in acute appendicitis. When appropriate therapy is applied, the signs and symptoms due to acidosis clear up promptly, while, of course, the signs and symptoms in the surgical cases will usually progress. Differentiation is not always possible and, when the patient does not respond in a reasonable length of time, an exploratory laparotomy should be done. In the author's case vomiting preceded the pain by several hours; the patient received insulin in large

amounts before entering the hospital, yet in an insufficient quantity to control the acidosis; prompt relief followed the administration of a small quantity of physiologic solution of sodium chloride, and the patient continued to show evidence of acidosis after the pain had subsided. These facts suggest that acidosis was not solely responsible for the symptoms, since, when measured by laboratory means, there was no reduction. The history suggests too that insulin was certainly not the sole factor in controlling the symptoms, but rather that the saline solution was responsible for the relief of symptoms. When clinical conditions, such as heat cramps and "gastric tetany," are considered, the connection seems even more probable. The author suggests that the events producing abdominal symptoms in diabetic acidosis probably develop in the following order: 1. Because of improper fat oxidation, acidosis develops; the acidosis in susceptible patients causes vomiting; the acidosis not being controlled, the vomiting continues. 2. The continuous vomiting depletes the body of chlorides because of loss of hydrochloric acid. The excessive diuresis would produce further chloride loss. 3. In the exercise of abdominal muscles and muscles of respiration, there is brought about a condition in these muscles similar to that which is present in heat cramps and gastric tetany; hence the pain, and hence the relief by sodium chloride.

**Blackwater Fever.**—Fernán-Núñez believes that blackwater fever is an allergic manifestation of malaria in which quinine, exposure and other resistance-reducing agencies aid in precipitating the attack. It occurs chiefly in Europeans who have had one or more attacks of estivo-autumnal fever during a residence usually of at least two years in the tropics. In such a person sensitized by previous attacks a new attack of estivo-autumnal malaria or the administration of quinine in a latent case brings on the acute syndrome by the liberation of allergens. The author applied his intradermal test with suspensions of *Plasmodium falciparum* rendered noninfective in a group of persons of Caucasian extraction who had resided in an endemic area of Colombia for more than six months. Following the removal of those showing a positive sensitivity, blackwater fever disappeared from that area.

**Treatment of Narcolepsy with Benzedrine Sulfate.**—Ulrich and his associates found that the inhalation of benzedrine (synthetic racemic benzyl-methyl carbinaminè) for the relief of nasal congestion was followed by sleeplessness, an experience that suggested the use of this method in the treatment of narcolepsy. Clinical trial showed, however, that inhalation of the drug produced very slight results, whereas oral medication was uniformly successful in preventing narcoleptic seizures. Six cases of narcolepsy, showing marked relief, have been treated by them and form the basis of their discussion. Prinzmetal and Bloomberg also found oral treatment with benzedrine to give complete relief in nearly all their cases. The effective daily amount of drug varied from 20 to 50 mg. It appears that the difference between inhalation and ingestion is quantitative. One patient complained of slight nausea at the beginning of oral medication, another's gastro-intestinal symptoms were aggravated during the first period of treatment but not subsequently, and a third had slight temporary anorexia at the beginning of each period of treatment. One patient, a Negro girl aged 12½ years, had an additional menstrual period while taking 50 mg. of the drug and has complained recently of a slight feeling of fullness at mealtime.

### Annals of Medical History, New York

7: 503-600 (Nov.) 1935

- James Clarke White: The First Professor of Dermatology in America. P. E. Bechet, New York.—p. 503.  
Some Account of David Samwell, the Welsh Surgeon, Eye-Witness of the Murder of Captain Cook, Feb. 14, 1779. D. F. Fraser-Harris, London, England.—p. 509.  
Grecian Athletic Training in the Third Century (A. D.). B. Gordon, Philadelphia.—p. 513.  
Shakespeare's Medical Knowledge: Study in Criticism. I. I. Edgar, Detroit.—p. 519.  
Conan Doyle. A. S. MacNalty, London, England.—p. 532.  
Samuel Jackson. W. S. Middleton, Madison, Wis.—p. 538.  
Depressed Fracture and Trephining of the Skull by the Incas of Peru. J. Daland, Philadelphia.—p. 550.  
William Coward, M.D., and His Works, Especially "Ophthalmiatria, London, 1706." B. Chance, Philadelphia.—p. 559.  
Galen's Writings and Influences Inspiring Them. J. Walsh, Philadelphia.—p. 570.

**Arch. of Physical Therapy, X-Ray, Radium, Chicago**

17: 129-192 (March) 1936

- Short Wave Diathermy: Comparative Study in Pelvic Heating. J. S. Coulter and S. L. Osborne, Chicago.—p. 135.
- Transurethral Prostatic Resection. W. F. Braasch and J. L. Emmett, Rochester, Minn.—p. 140.
- Biomechanics: New Method of Studying Physical Disabilities. C. M. Gratz, New York.—p. 145.
- Flexible Electrosurgical Unit. A. E. Jones, Chicago.—p. 153.
- Colonic Lavage in Treatment of Disease. J. W. Wiltse, Binghamton, N. Y.—p. 154.
- Simplification of Radium Technic in Uterine Cervical Cancer. H. Swanberg, Quincy, Ill.—p. 162.
- Fever Therapy in Dementia Paralytica: Its Status at State Hospitals of Illinois. R. H. Kuhns, Chicago.—p. 167.

**Archives of Surgery, Chicago**

32: 577-746 (April) 1936

- Effect of Bilateral Resection of Splanchnic Nerves on Gastric Motility in Man. L. E. Barron, New Haven, Conn., G. M. Curtis and W. T. Haverfield, Columbus, Ohio.—p. 577.
- \*Lactogenic Substance in Human Breast: Its Use in Experimental Stimulation of Mammary Secretion and Its Assay in Cases of Cystic Disease. C. F. Geschickter and D. Lewis, Baltimore.—p. 598.
- Disturbances in Gastro-Intestinal Function After Localized Ablations of Cerebral Cortex. F. A. Mettler, J. Spindler, Cecilia C. Mettler and J. D. Combs, Augusta, Ga.—p. 618.
- Alcoholic Cachexia: Experimental Studies. A. D. Bissell and E. Andrews, Chicago.—p. 624.
- \*Malignant Degeneration of Benign Bone Cyst? C. B. Francisco, Kansas City, Kan., M. E. Pusitz and M. Gerundo, Topeka, Kan.—p. 669.
- Carcinoma of Stomach Following Gastro-Enterostomy for Peptic Ulcer. H. K. Ransom, Ann Arbor, Mich.—p. 679.
- Chronic Subdural Hematoma. L. T. Furlow, St. Louis.—p. 688.
- Autotransplantation of Parathyroid Gland in Dog: Evaluation of Halsted's Law of Deficiency. P. Shambaugh, Boston.—p. 709.
- Evisceration Following Abdominal Operations. R. B. Bettman and Gemma M. Lichtenstein, Chicago.—p. 721.
- Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; J. Verbrugge, Antwerp, Belgium; A. B. Hepler, Seattle; R. Gutierrez, New York, and V. J. O'Connor, Chicago.—p. 730.

**Lactogenic Substance in Human Breast.**—Geschickter and Lewis produced mammary secretion in three of sixteen non-pregnant menstruating women by intramuscular administration of estrogen and of lactogenic substance, which had no effect in eight and lactogenic substance alone had no effect in the remaining five. In the three women in whom mammary secretion was observed, a diagnosis of adenosis of the breast was made. Each received about 3,500 units of estrogen over a period of a month, followed by injections of from 600 to 1,120 bird units of lactogenic substance given within a week. The secretion ceased within a period of three days and could not be prolonged by further injections or by mechanical stimulation. Histologic studies of tissue removed for biopsy were made before and after the injections in several cases. The changes of true functional lactation were not observed histologically. Bio-assays showed the presence of lactogenic substance in the tissue of udders from lactating cows and in the milk (mixed with colostrum) of lactating cows obtained within two weeks of calving. It was concluded that high concentrations of estrogen, of lactogenic substance and of progesterin are probably essential to normal lactation in the human breast. The resemblance between the secretory activity seen in patients with chronic cystic mastitis and that obtained in the patients treated in this series is pointed out. Bio-assays have demonstrated the presence of estrogen and of lactogenic substance in the cyst fluid from patients with chronic cystic mastitis. Bio-assays have also shown the presence of estrogen in mammary tissue removed from patients with chronic cystic mastitis. It is concluded that lactogenic substance and estrogen assume an etiologic rôle in the secretory activity and in the pathologic changes observed in patients with cystic disease.

**Malignant Degeneration of a Bone Cyst.**—Francisco and his co-workers cite a case of what they believe to be a malignant change in a benign bone cyst. The child, when 9 months old, slipped and fell, receiving a definite injury to the leg. Conservative treatment was tried for six months but had no effect in lessening the pain. When she was 15 months old, roentgenograms were taken and a diagnosis of sarcoma was made. Roentgen treatment had no effect in controlling the pain, which caused the parents to seek further help. No definite deformity was described at that time. The child was approximately 3 years old when she was first seen by one of the authors (Francisco), at which time no gross deformity was

noted. Anteroposterior and lateral roentgenograms of the right tibia, taken April 4, 1928, showed a multilocular cystic appearance of the upper end of the tibia. This began at or below the metaphyseal end of the diaphysis and did not extend upward at all, so that the lesion did not affect the epiphyseal line. Areas of sclerosis were seen already lining some of the cystic cavities. The area of involvement extended downward for about one third or less of the length of the shaft of the bone. June 25, 1930, roentgenograms showed almost complete obliteration of the cystic cavities, with much condensation of the bone. At that time the patient was discharged by Francisco as cured of the bone cyst. No further trouble was encountered until the present illness, which began Dec. 18, 1934, with the complaint of pain and swelling in the upper part of the right leg. December 20 a simple exploration was performed. Macroscopically the tissues resembled sarcomatous tissue rather than granulation or cystic tissue. The roentgenologist stated that, if the clinical and pathologic diagnosis was osteogenic sarcoma, the roentgenogram could be well interpreted as showing osteogenic sarcoma. The final diagnosis was osteogenic sarcoma, and immediate amputation to be followed by irradiation was advised. The amputation was performed in the upper part of the thigh at the junction of the upper with the middle third, leaving just enough stump to control an artificial leg. The patient did exceptionally well after the amputation and has made a remarkable personal change. She received her first course of roentgen therapy and is to return for further irradiation under the supervision of the radiologist. The tumor tissue was found to be made up chiefly of large capsulated cells, which had the characteristics of hyaline cartilage cells. The pathologic diagnosis was chondrosarcoma of the tibia originating from the metaphysis and extending to the diaphysis of the bone.

**Colorado Medicine, Denver**

33: 233-304 (April) 1936

- Scope and Limitation of the Term "Eczema." G. M. Frumess, Denver.—p. 244.
- The Relationship of Fear to the Psychoneuroses: Preliminary Report. J. P. Hilton, Denver.—p. 248.
- Diagnosis of Bronchopneumonia. R. C. Trueblood, Cody, Wyo.—p. 257.
- Lobar Pneumonia in the Adult. W. B. Yegge, Denver.—p. 258.
- Bronchopneumonia in Infancy and Childhood: Incidence, Prognosis and Treatment. J. W. Ames, Denver.—p. 263.
- Treatment of Pneumonia. R. T. Jellison, Salt Lake City.—p. 267.

**Endocrinology, Los Angeles**

20: 137-306 (March) 1936

- \*Metabolic Studies of Pituitary Insufficiency. H. A. Bulger and D. P. Barr, St. Louis.—p. 137.
- \*Cachexia Hypophyseopriva (Simmonds' Disease) with Thyroid and Suprarenal Insufficiency. E. Rose and G. Weinstein, Philadelphia.—p. 149.
- Pituitary Cachexia (Simmonds' Disease): Report of Case in Which the Patient Failed to Respond to Various Forms of Endocrine Therapy. R. C. Moehlig, Detroit.—p. 155.
- Effect of Alkaline Extract of Anterior Hypophysis on Weight of Spleen and Adrenal Glands and on Blood Calcium Level. H. B. Friedgood, Boston.—p. 159.
- Influence of Endocrine Gland Preparations on Allergic Reactions (Anterior Pituitary Extract, Pregnancy Urine Extract, Follicular Hormone). B. Solomonica and R. Kurzrok, New York.—p. 171.
- Familial Hemolytic Icterus Associated with Endocrine Dysfunction. E. H. Falconer, San Francisco.—p. 174.
- Excretion of Prolan in Essential Hypertension. M. Scarf and S. L. Israel, Philadelphia.—p. 180.
- Chemical Changes in Muscle of Hypophysectomized Toad. A. D. Marenzi, Buenos Aires, Argentina.—p. 184.
- Is the Pressor Effect of Glycerin Extract of Adrenal Glands Due to Epinephrine? R. G. Hoskins and J. S. Gottlieb, Worcester, Mass.—p. 188.
- Difference of Response of Males with Undescended Testes to Water Soluble (Anterior Pituitary-like) Fraction of Pregnancy Urine. H. S. Rubinstein, Baltimore.—p. 192.
- Effect of Gonadectomy on Thyroid Gland in the Guinea-Pig. A. A. Kippen and L. Loeb, St. Louis.—p. 201.
- Induction of Acid Vaginal Secretion in Immature Macaque by Injections of Estrin. B. V. Hall, Urbana, Ill., and R. M. Lewis, New Haven, Conn.—p. 210.
- Reaction of Fish to Sex Hormones. S. E. Owen, Hines, Ill.—p. 214.
- Effect of Injections of Antuitrin-S on Sexually Inactive Male Ground Squirrel. B. L. Baker and G. E. Johnson, Manhattan, Kan.—p. 219.

**Metabolic Studies of Pituitary Insufficiency.**—The studies of Bulger and Barr relate to the activity of pituitary and certain other extracts on metabolic processes. They were made on four patients with marked endocrine abnormalities in which the pituitary was possibly primarily involved. Two

patients considered to have respectively pituitary cachexia and pituitary dwarfism showed a definite gain in weight, improvement in their general condition and marked storage of nitrogen, sulfur, calcium and phosphorus without specific treatment. There seemed to be no cause for this except an adequate attractive diet, rest and good nursing care. In a case considered to be pituitary cachexia, magnesium was lost during control periods of study while rather large amounts of other elements were stored. In the case of pituitary dwarfism, magnesium as well as other elements was retained. The administration of adrenal cortex extract in pituitary cachexia was associated with a temporary rise in blood pressure, reversion of a negative magnesium balance to a positive balance and increased retention of calcium. When the extract was discontinued, this was followed by an increased excretion of magnesium, calcium and phosphorus. The administration of anterior pituitary-like substance from pregnancy urine to a patient with pituitary cachexia for seven days caused a prolonged rise in blood pressure, an increase in the negative magnesium balance and retention of magnesium. Growth hormone produced no striking changes in pituitary cachexia or pituitary dwarfism. A patient with pituitary cachexia, while receiving thyrotropic hormone, became quite ill. The basal metabolic rate rose to normal. A loss of nitrogen, phosphorus and sulfur ensued and calcium retention decreased. A negative magnesium balance of control periods reverted to a positive balance. Creatinuria developed though the basal metabolic rate did not rise above normal. While the patient was receiving the thyrotropic hormone and still quite ill, adrenal cortex extract appeared to cause some improvement and was associated with a rise in blood pressure. The patient with pituitary dwarfism also became ill on thyrotropic hormone. The basal metabolic rate at first rose slightly and then fell to below the original level. He developed a negative nitrogen and sulfur balance. The previous positive magnesium balance reverted to a negative balance. Creatinuria increased. Starting on the seventeenth day, while still receiving thyrotropic hormone, he was given iodine. Coincident with this the basal metabolic rate fell still lower and he began to store all the elements studied. A patient with myxedema and evidence of pituitary disease showed no change in basal metabolic rate or nitrogen metabolism on thyrotropic hormone. Desiccated thyroid, however, produced a typical response with a negative nitrogen balance and marked creatinuria even though the basal metabolic rate did not rise above normal.

**Cachexia Hypophyseopriva with Thyroid and Adrenal Insufficiency.**—Rose and Weinstein cite a case of pituitary cachexia, verified by necropsy. From the histologic appearance alone it could not be determined definitely whether the pituitary, thyroid or adrenal changes initiated the patient's disease. However, the clinical history conforms well with that of primary pituitary cachexia, and it may be reasonably assumed that this was not a case of multiple synchronous endocrine sclerosis of the Falta type. The marked hypoglycemia and increased dextrose tolerance, the terminal coma, hemoconcentration, azotemia and hypotension all suggest a terminal adrenal failure as the immediate cause of death. The high fever is rather difficult to explain, although terminal hyperpyrexia occurs in pituitary neoplasms; a terminal septicemia might have been responsible. The return of the basal metabolism to normal under thyroid therapy in 1931 suggests that its original low level was due to secondary thyroid failure rather than directly to anterior pituitary insufficiency. The hypercholesterolemia was probably also due to secondary thyroid failure. The dense round cell infiltration of the thyroid suggested an associated inflammatory process in addition to the atrophy, fibrosis and disorganization. Death occurred before cachexia had become marked. The hemorrhagic spongy appearance of the gums suggested a possible scorbutic factor associated, perhaps, both with dietary deficiency and inability to utilize available cevitamic acid because of adrenal insufficiency. Finally, the correct diagnosis should have been made or suspected when the patient was first seen in 1931, as the history and signs were fairly typical at that time. At necropsy marked atrophy, fibrosis and destruction of normal architecture were noted in the anterior pituitary, adrenal cortices and thyroid. The posterior pituitary and pancreas were not affected.

## Florida Medical Association Journal, Jacksonville

22: 393-448 (March) 1936

- Immunization Against Contagious Diseases of Childhood. W. Quillian, Coral Gables.—p. 407.  
Basic Changes in Tuberculosis Control. J. A. Myers, Minneapolis.—p. 412.  
Adenoma of the Thyroid. C. Anderson, Orlando.—p. 420.

## Georgia Medical Association Journal, Atlanta

25: 75-112 (March) 1936

- Contributions of Crawford W. Long and His Contemporaries to American Medicine. M. Cutler, Chicago.—p. 75.  
Signs and Symptoms of Early Cancer. J. F. Denton, Atlanta.—p. 81.

## Journal of Experimental Medicine, New York

63: 465-616 (April 1) 1936

- Effects of Adrenalectomy and Hypophysectomy on Experimental Diabetes in the Cat. C. N. H. Long and F. D. W. Lukens, Philadelphia.—p. 465.  
Studies on Etiology of Rabbit Pox: V. Studies on Species Susceptibility to Rabbit Pox Virus. Louise Pearce, P. D. Rosahn and C. K. Ho, New York.—p. 491.  
Studies on Uncomplicated Coryza of Domestic Fowl: V. Coryza of Slow Onset. J. B. Nelson, Princeton, N. J.—p. 509.  
Id.: VI. Coccobacilliform Bodies in Birds Infected with Coryza of Slow Onset. J. B. Nelson, Princeton, N. J.—p. 515.  
Concerning Relation of Environmental Temperature to Resistance to Thyroid and Thyroxine, and Creatine Content of the Heart and Other Tissues in Experimental Hyperthyroidism. M. Bodansky, J. F. Pilcher and Virginia B. Duff, Galveston, Texas.—p. 523.  
Epidemic in Mouse Colony Due to Virus of Acute Lymphocytic Choriomeningitis. E. Traub, Princeton, N. J.—p. 533.  
Studies on Meningococcus Infection: IX. Standardization and Concentration of Antimeningococcus Horse Serum (Type I). H. W. Scherpf and G. Rake, New York.—p. 547.  
Studies on the Common Cold: VI. Cultivation of Virus in Tissue Medium. A. R. Dochez, K. C. Mills and Y. Kneeland Jr., New York.—p. 559.  
\*Studies on Virus of Influenza. A. R. Dochez, K. C. Mills and Y. Kneeland Jr., New York.—p. 581.  
Relation of Hypophysis to the Spleen: I. Effect of Hypophysectomy on Growth and Regeneration of Spleen Tissue: II. Presence of Spleen-Stimulating Factor in Extracts of Anterior Hypophysis. D. Perl, New York.—p. 599.

**Studies on Virus of Influenza.**—Dochez and his associates report the experiments that they have performed with the virus of influenza from 1931 to 1935. Evidence is presented indicating the presence of a filtrable virus in the nasopharyngeal secretions of individuals suffering from influenza. An attempt to transfer influenza from one human being to another by means of filtered nasopharyngeal washings resulted in the production in the inoculated volunteer of a common cold. A filtrable agent has been cultivated in tissue medium from the filtered nasopharyngeal washings of patients with influenza. Inoculation of the cultivated virus into volunteers results for the most part in the production of a severe common cold with a tendency to pronounced constitutional reaction. In one instance following inoculation of culture virus an infection clinically resembling influenza has been produced. The more closely the source of the virus approached the type of epidemic influenza, the more likely the virus was to provoke constitutional symptoms. The presence of certain pathogenic bacteria in the upper respiratory tract of inoculated individuals was not observed to modify the course or character of the experimental infection. On prolonged cultivation the virus loses the capacity to infect human volunteers.

## Journal of Nutrition, Philadelphia

11: 191-292 (March 10) 1936

- Energy and Gaseous Metabolism of Normal and Deuteromized Chicks Between Ten Hours and One Hundred Hours of Age. H. G. Barott, T. C. Byerly and Emma M. Pringle, Beltsville, Md.—p. 191.  
Calcium and Phosphorus Retention in Growth, in Relation to Form of Carbohydrate in Food. Mary Speirs and H. C. Sherman, New York.—p. 211.  
Effect of Heat as Used in Extraction of Soy Bean Oil on Nutritive Value of Protein of Soy Bean Oil Meal. J. W. Hayward, H. Stenbock and G. Bohnstedt, Madison, Wis.—p. 219.  
Metabolism of Women During the Reproductive Cycle: VII. Utilization of Inorganic Elements (Continuous Case Study of Multipara). Frances Coe Hummel, Helen R. Sternberger, Helen A. Hunscher and Icie G. Macy, Detroit.—p. 235.  
Significance and Accuracy of Biologic Values of Proteins Computed from Nitrogen Metabolism Data. H. H. Mitchell, W. Burroughs and Jessie R. Beadles, Urbana, Ill.—p. 257.  
Rickets in Rats: XV. Effect of Low Calcium High Phosphorus Diets at Various Levels and Ratios on Production of Rickets and Tetany. A. T. Shobl, with note by S. B. Wolbach, Boston.—p. 275.

## Journal of Urology, Baltimore

35: 253-416 (March) 1936

- Leiomyoma Associated with Benign Cysts in Kidney with Duplicate Pelvis. V. S. Counseller and J. G. Menville, Rochester, Minn.—p. 253.
- Unusual Unilateral Multicystic Kidney in an Infant. J. Schwartz, New York.—p. 259.
- Surgical Treatment of Horseshoe Kidney, with Especial Reference to Division of Isthmus. W. W. Baker and J. A. C. Colston, Baltimore.—p. 264.
- Peripancreatitis. Secondary to Perirenal Infections. C. Ferguson, Ellis Island, N. Y.—p. 286.
- \*Vaginal Ureterolithotomy. E. C. Shaw, Miami, Fla.—p. 289.
- Clinical Importance of Ureterocele. J. S. Rhodes, Boston.—p. 300.
- Experiences with Renal and Vesical Carcinoma. F. T. Bond, New York.—p. 309.
- Bladder Tumors. F. J. Parmenter and C. J. Leutenegger, Buffalo.—p. 316.
- Leukoplakia and Carcinoma of Urinary Bladder: Report of Case, with Review of Literature. S. M. Rabson, New York.—p. 321.
- \*Carcinoma of Prostate Simulating Primary Rectal Malignancy. C. J. E. Kickham, Boston.—p. 342.
- The Very Aged Prostatic. F. P. Twinem, New York.—p. 349.
- Retrovesical Sarcoma. H. C. Rolnick, Chicago.—p. 353.
- Primary Tuberculosis of the Penis. J. A. Lazarus and A. A. Rosenthal, New York.—p. 361.
- Relationship of Cryptorchidism to Tumor of Testis. F. Hinman and F. H. Benteen, San Francisco.—p. 378.
- Biochemistry and Physiologic Significance of Male Sex Hormones. F. C. Koch, Chicago.—p. 382.
- Cardiaspasm and Paralysis of Bladder Due to Sympathetic Dysfunction: Case. T. E. Gibson and V. H. Mitchell, San Francisco.—p. 399.
- Peridural Segmentary Anesthesia in Renal Surgery. L. Caporale, Turin, Italy.—p. 403.
- Improved Retention Catheter. F. C. Hendrickson, Canton, Ohio.—p. 409.
- The Rubin Endoscope. J. S. Rubin, Los Angeles.—p. 411.
- New Hemostatic Bag for Use After Suprapubic Prostatectomy. B. S. Brake, Clarksburg, W. Va.—p. 413.

**Vaginal Ureterolithotomy.**—Shaw employed the lateral incision directly over the ureter in his four vaginal ureterolithotomy operations and found this simple method satisfactory. A description of the operation is given. In two cases the operation seemed to be almost life saving, as he does not believe that either patient could have stood the removal of the calculus by any other approach at the time. The accidental production of vesicovaginal fistula in his first case illustrates a possible operative complication that has not been stressed in the literature. If the operator keeps the relationship of the base of the bladder, cervix and ureter in mind, this accident should never occur. The bladder can be readily avoided by inclining the dissecting finger laterally and posteriorly and approaching the ureter on its lateral and posterior aspect. The selection of cases for the employment of vaginal ureterolithotomy may well give rise to some difference of opinion. Obviously, impacted stones, readily palpable on vaginal examination, fall into this group. It is quite probable that calculi so small or so high as not to be palpable, but demonstrated roentgenographically in the lower ureter and fixed with a ureteral catheter, may be handled by this approach. The failure of an attempt to remove the calculus by the vaginal route would do the patient little harm and it might be tried even in doubtful cases before the more serious abdominal operation is employed. The author is in accord with the conclusions reached by Lower in listing the advantages of vaginal ureterolithotomy. The operation carries so slight a degree of shock that it may be performed with relative safety on extremely ill patients.

**Carcinoma of Prostate Simulating Malignant Condition of Rectum.**—During the last three years Kickham encountered four cases of carcinoma of the prostate that were unusual in their extension and clinical behavior. The predominant symptoms were referred to the rectum and consisted of intractable constipation, tenesmus, mucus discharge at the anus, fecal incontinence and, in one instance, rectal bleeding. Symptoms referable to the genito-urinary tract were either absent or, if present, were mild in character. On digital examination the appearance of the rectum closely simulated a malignant rectal disorder. The final clinical diagnoses were made only after special diagnostic measures, including proctoscopy, cystoscopy and roentgenologic studies. In view of the anatomic approximation of the rectum and the prostate gland, it would seem logical to encounter rectal symptoms frequently in the development and course of a malignant condition of the prostate, due either to actual invasion of the rectal wall by the tumor

cells or to constriction of its lumen by the bulging mass of the tumor. However, this does not take place as often as one would expect, apparently because of nature's line of defense—Denonvilliers' fascia lying between the two organs and acting as a barrier against posterior invasion of the neoplasm. However, actual rectal extension from carcinoma of the prostate may occur, as this fascia is not impervious to invasion by tumor cells. It is at times disclosed at postmortem examination when clinical signs have not suggested it. In more than 200 cases of carcinoma of the prostate at the Pondville Hospital, no fistulas were encountered clinically. The author feels that it is most unusual to find carcinoma of the prostate gland simulating a malignant condition of the rectum so closely as in the four cases described.

## Laryngoscope, St. Louis

46: 169-244 (March) 1936

- Present Status of Plastic Nasal Surgery. S. Cohen, Philadelphia.—p. 169.
- Sewall Sphenoid Sinus Operation, Modified. W. D. Chase, Bethlehem, Pa.—p. 181.
- Permanent Drainage for Frontal Sinusitis. H. H. Amsden, Concord, N. H.—p. 184.
- Bilateral Blindness Due to Affection of Posterior Accessory Sinuses. J. J. Rainey, Troy, N. Y.—p. 185.
- Auditory Function Studies in Unselected Group of Pupils at the Clarke School for the Deaf: III. Relation Between Hearing Acuity and Vestibular Function. Ruth P. Gilder and Louise A. Hopkins, Northampton, Mass.—p. 190.
- Thrombophlebitis of Internal Jugular Vein Following Acute Tonsillitis: Report of Case. L. C. Menger, Brooklyn.—p. 198.
- The Care of Cleft Palate Patients. H. G. Beatty, Columbus, Ohio.—p. 203.
- One Hundred and Seventy-Nine Foreign Bodies in Food Passages. G. O. Cummings, Portland, Maine.—p. 227.

## Maine Medical Journal, Portland

27: 45-62 (March) 1936

- Observations on Successful Diagnosis and Treatment of Cancer. Barbara Hunt, Bangor.—p. 50.
- Brain Tumors. O. L. Hanlon, Ridgelyville.—p. 53.
- Laryngeal Diphtheria. G. O. Cummings, Portland.—p. 55.
- \*Temporary Insulin Resistance Associated with Acute Prostatic Obstruction. E. R. Blaisdell, Portland.—p. 58.

**Temporary Insulin Resistance.**—Blaisdell reports the case of an elderly man with diabetes who entered the hospital for treatment of a ruptured quadriceps muscle and was standardized with 45 units of insulin daily but developed a prostatic obstruction and temporary resistance to insulin. At the height of the resistance, 289 units was given daily in the absence of acidosis. During the period of the resistance (twenty-nine days) he was given 5,692 units of insulin. A transurethral prostatectomy, performed shortly after the period of resistance, had no appreciable effect on the insulin requirement and, six months later, the daily requirement was only 10 units. It is difficult to explain the sudden increase in insulin requirement. It hardly can be ascribed to the prostatic obstruction, as diabetic patients with prostatic obstruction rarely require more than a moderate increase, if any, in insulin during the period of obstruction. Examination failed to disclose any evidence of infection at the onset of the resistance. The patient did have a rise of temperature for a few days, but this did not develop until two weeks after it was necessary to increase the insulin. The most probable explanation was the possibility of a posterior urethral infection or a prostatic abscess, but the absence of pus in the urine makes one somewhat skeptical of this diagnosis. It is fair to assume, however, that failure to control the diabetes with adequate doses of insulin would have resulted in death.

## Medicine, Baltimore

15: 1-128 (Feb.) 1936

- \*Artificial Pneumothorax in Lobar Pneumonia. F. G. Blake, Marion E. Howard and Winifred S. Hull, New Haven, Conn.—p. 1.
- Treatment of Human Brucellosis: Review of Current Therapeutic Methods. C. M. Carpenter and Ruth A. Boak, Rochester, N. Y.—p. 103.

**Artificial Pneumothorax in Lobar Pneumonia.**—In their observations on the therapeutic effects of artificial pneumothorax in forty-two cases of lobar pneumonia, Blake and his co-workers place emphasis on the method of treatment evolved during the course of the study and on the effect of artificial pneumothorax on the clinical course and outcome of the disease in an effort to define tentatively the conditions under which artificial pneu-

mothorax would appear to be therapeutically useful. The results obtained indicate that the procedure is of definite therapeutic value, but only under certain limited conditions: 1. When the volume of air introduced into the pleural cavity is sufficient to raise the mean intrapleural pressure promptly to from +1 to +2 cm. with the patient in the lateral position, pneumonic side up, resulting in complete collapse and immobilization of the lung on the affected side. 2. When the frequency and volume of refills is sufficient to maintain the mean pressure at this level and the lung retracted until danger of relapse is past. 3. When treatment is instituted early in the disease; i. e., certainly within less than seventy-two hours after onset, probably within less than forty-eight hours in most cases. 4. When the pleura is free from adhesions that interfere with retraction of the involved lung. The series includes ten cases without interfering pleural adhesions in which treatment was started prior to forty-eight hours after onset. Artificial pneumothorax seemed of little or no therapeutic value in advanced cases of more than seventy-two hours' duration and in even earlier cases with extensive pleural adhesions. In the intermediate group first treated between forty-eight and seventy-two hours after onset, the results remain of doubtful significance in view of the early appearance of agglutinins in three of the six cases without adhesions, and the occurrence of relapse after initial improvement in two of the remaining three cases.

### Missouri State Medical Assn. Journal, St. Louis

33: 121-164 (April) 1936

- \*Significance of Convulsions in Diagnosis of Brain Tumor. E. Sachs and L. T. Furlow, St. Louis.—p. 121.  
Ethical Plan for Medical Care of Those in Low Income Group. W. T. Coughlin, St. Louis.—p. 127.  
\*Parathyroids in Relation to Chronic Arthritis: Practitioner's Common-place Point of View. W. T. Wootton, Hot Springs National Park, Ark.—p. 129.  
Treatment of Chronic Uncomplicated Malnutrition. B. Y. Glassberg, St. Louis.—p. 132.  
Tendovaginitis (Tenosynovitis): General Discussion and Report of One Case Involving Posterior Tibial Tendon. J. Kulowski, St. Joseph.—p. 135.  
Acute Mastoiditis Including Indications for Operation. I. D. Kelley Jr., St. Louis.—p. 137.  
New Method for Reduction and Retention of Central Dislocations of Hip and of Fractures of Acetabulum with Displacement. E. P. Heller, Kansas City.—p. 139.  
Pathology of Air Embolism: Report of Two Cases. L. L. Turean and J. B. Devine, St. Louis.—p. 141.  
Bronchoscopy: Diagnostic Aid. J. S. Knight, Kansas City.—p. 144.

**Significance of Convulsions in Diagnosis of Brain Tumor.**—Sachs and Furlow believe that every adult patient who has a convulsion must be considered as possibly having a tumor until proved otherwise. In a review of 724 cases of verified tumors 150, or 20.7 per cent, had convulsions at some time before operation. In this series, 397 patients had cerebral tumors, 247 had cerebellar tumors and seventy-nine had pituitary tumors. None of the patients with pituitary tumors had convulsions. Only twelve, or 4.8 per cent of the patients with cerebellar tumors had convulsions, while 138 of the 397 with cerebral tumors, or 34.8 per cent, had convulsions. In other words, more than one third of all the patients with cerebral tumors had convulsions either as the first symptom or at some time in the course of the disease. Of the 150 patients who had convulsions, twenty-seven had them for periods ranging from five to twenty-five years before the diagnosis of tumor was finally made. These patients had benign, slowly growing tumors and should have presented an excellent prognosis. Owing to the fact, however, that the tumor had been present such a long time, permanent irreparable damage had occurred frequently and the tumor had attained such great size that what might have been a comparatively simple operation in the early years had become a most difficult one.

**Parathyroids in Relation to Chronic Arthritis.**—Wootton's interpretation is that the bone deformity called arthritis is merely one symptom, although the one most frequently seen, of the shifting location of the lime salts making up our skeletal framework and blood serum content. Therefore, one may consider chronic arthritis as one of the stages of calcium metabolism and dependent completely on there being a concomitant edema (allergy) of the synovia. If one can prevent the original edema one can first prevent the occurrence of acute arthritis and secondly remove the primary essential to all

chronic changes of the joint other than the purely mechanical. Without an edema of the synovia or periosteum of a joint the protection remains impervious to either an absorption or a redeposit of calcium within a joint. Oppel, Ballin and Morse report encouraging results from the removal of a parathyroid. Oppel says that pain and stiffness were relieved almost at once. The beneficial influence of parathyroidectomy on pain and stiffness of the spine was marked in all cases. Merritt reports improvement by irradiation of the parathyroids in his cases of hypercalcemia producing cystic degeneration of the long bones and vertebrae. Schkurov reports 116 cases of chronic polyarthritis and spondylarthritis in which only eight patients failed to get relief from pain and swelling and have restored a considerable degree of mobility following parathyroidectomy. Schkurov gives Oppel the credit for establishing the rationale of the procedure. As surgical intervention is apparently still in the experimental stage in this country and abroad and roentgen atrophy of the glands has not proved uniformly encouraging, the only other route of attack lies in the prevention of allergic reaction in the synovia against allergens from foci of infection and protein foods. Undoubtedly there will be times when a hyperplastic gland may be suspected or an adenoma may be removed. But these occurrences will be so few compared to the irregular and transitory overstimulation of the parathyroids that may occur from numerous causes that they will prove exceptional. And always one will be faced with the problem of whether the hyperparathyroidism is mechanical as the result of hyperplasia or adenoma due to endocrine influence or automatically induced by hyperphosphatemia not causally related to the endocrine system.

### New England Journal of Medicine, Boston

214: 613-664 (March 26) 1936

- Certain Aspects of Hand Surgery. T. W. Harmer, Boston.—p. 613.  
Activity of Urinary Bladder as Measured by New and Inexpensive Cystometer. D. Munro, Boston.—p. 617.  
Management of Skull Fractures: How Can the High Mortality Rate Be Reduced? H. E. Mock, Chicago.—p. 625.  
The Mechanics of Delivery, Especially as It Relates to Intracranial Hemorrhage. F. C. Irving, Boston.—p. 635.  
Prevention of Puerperal Infection. F. S. Kellogg, Boston.—p. 636.  
Causes of Sudden Blindness. A. J. Bedell, Albany, N. Y.—p. 640.

### New York State Journal of Medicine, New York

36: 383-468 (March 15) 1936

- Abuse of Cesarean Section. E. G. Langrock, New York.—p. 383.  
Tuberculous and Tuberculoïd Skin Diseases: Study of Two Hundred and Forty Cases. T. J. Riordan, New York.—p. 388.  
\*Value of Erythrocyte Sedimentation Rate Determination in Psychiatric Cases. H. S. Gregory, Binghamton.—p. 391.  
Treatment of Gastroduodenal Ulcers as an Office Procedure. A. Bassler, New York.—p. 395.  
Gallbladder Disease. M. H. V. Cameron, Toronto, Canada.—p. 399.  
Scarlet Fever Immunity: Production and Maintenance: Study of Comparative Values of Raw and Modified Streptococcus Toxins. R. J. Reid, Thiells.—p. 403.  
The Place of Neuropsychiatry in a General Hospital. J. L. Eckel, Buffalo.—p. 407.  
Roentgenographic Examination of Lungs: Relationship of Certain Technical Factors. C. C. McCoy, Cooperstown.—p. 411.  
The New State Tuberculosis Hospitals. R. E. Plankett, Albany.—p. 418.  
Psychic Factors in Cardiovascular Disease. H. F. Dunbar, New York.—p. 423.  
Facial Paralysis: In Acute and Chronic Purulent Otitis Media. C. Hirsch, New York.—p. 430.

**Erythrocyte Sedimentation Rate in Psychiatric Cases.**—According to Gregory, the erythrocyte sedimentation rate determination, based on the study of blood specimens (oxalated) from 1,102 newly admitted patients to the Binghamton State Hospital over a period of three years, seems to permit the following conclusions: 1. It is not diagnostic of any particular psychotic group. 2. It is a valuable diagnostic and prognostic aid in evaluating organic pathologic changes in all types of mental cases, often revealing the presence of previously unsuspected disease and giving an indication for further physical diagnostic studies. 3. Higher rates were obtained in the group of organic than in the group of functional psychoses because of the more frequent occurrence of inflammations, new growths, tissue degenerations, and so on. 4. The test is sensitive to acute respiratory infections, including the common cold, and to immunization inoculations, which must be ruled out in

searching for an underlying pathologic condition. 5. Potassium oxalate is a satisfactory anticoagulant, making it possible to apply the test with oxalated blood specimens sent to the laboratory for other types of examinations. 6. The technic is so simple as to make the test a boon to the private practitioner as well as to the hospital pathologist.

## Ohio State Medical Journal, Columbus

32: 289-384 (April 1) 1936

- Upper Abdominal Distress. C. R. Clark, Youngstown.—p. 305.  
The Prevention of Cancer of the Cervix. P. Findley, Omaha.—p. 309.  
Nasal Manifestations of Allergy in Infancy and Childhood. K. D. Figley, Toledo.—p. 312.  
\*Clinical Application of Anatomy and Physiology of Hypothalamus. A. R. Vonderahe, Cincinnati.—p. 315.  
Functional Heart Disorders. F. Jukes, Akron.—p. 319.  
Maternal and Fetal Mortalities. S. C. Runnels, Cleveland.—p. 323.  
The Relationship of Eye Defects to School Failures. G. L. King Jr. and Dorothea Keplinger, Alliance.—p. 331.  
Status of Serums and Vaccines in General Practice. W. G. Workman, Washington, D. C.—p. 335.  
Carcinoma of the Bronchus: Suggestions in Diagnosis. C. P. Swett, Sugar Grove.—p. 338.  
Are Mercy Killings Justified? G. E. Byers, Salem.—p. 342.  
Case Record Presenting Clinical Problems: A Child with Septic Temperature, Progressive Anemia, Enlarged Spleen and Death. H. L. Reinhart and S. A. Hatfield, Columbus.—p. 345.

**Application of Anatomy and Physiology of Hypothalamus.**—Vonderahe states that accumulating clinical and pathologic data indicate that the pituitary body cannot be considered apart from the contiguous portion of the central nervous system; i. e., hypothalamus. All cases suggesting the traditional symptomatology of pituitary disease, therefore, require investigation into possible central neurologic mechanisms involved in the production of these phenomena. The central domination of the metabolic function, temperature regulation, sleep and the sympathetic and parasympathetic systems suggests that the complete understanding of metabolic disease as presented to the internist requires inclusion of a consideration of these central visceral centers. The various trophic disturbances of the skin presented to the dermatologist and the trophic disturbance of bones presented to the orthopedist similarly require understanding of this area for the adequate explanation of many of the cases. For the pharmacologist it appears most probable that hidden away in this central area of the brain, difficult of access by surgery, are cellular centers capable of highly selective and specific responses to drugs. The area is of special interest to the psychiatrist. If the psychiatrist insists on an organic foundation for psychoses, here is the area in which biochemistry and neurology meet to offer a basis for a physical foundation for behavior; if the psychiatrist finds the answer to his problems in purely conscious mechanism, here is the necessary anatomic substratum for his theories; if he does not wish to commit himself to either extreme, the anatomic and physiologic data here presented permit him to interpret his observations with a suitable balanced attitude.

## Pennsylvania Medical Journal, Harrisburg

39: 385-472 (March) 1936

- Treatment of Sinus Disease. A. W. Proetz, St. Louis.—p. 385.  
Etiology and Diagnosis of Sinusitis. W. D. Chase, Bethlehem.—p. 389.  
Clinical Anatomy and Development of Paranasal Sinuses. J. P. Schaeffer, Philadelphia.—p. 395.  
Roentgen-Ray Diagnosis of Accessory Sinus Disease. W. F. Manges, Philadelphia.—p. 404.  
Group Hospitalization from the Medical Standpoint. S. R. Haythorn, Pittsburgh.—p. 409.  
Pediatric Therapeutics. W. N. Bradley, Philadelphia.—p. 412.  
The More Common Obstetric Complications. J. R. Eisaman, Pittsburgh.—p. 413.  
\*Complement Fixation Test in Gonorrheal Infection. H. Hirshland and Helen C. Hirshland, Reading, Pa.—p. 416.  
Differential Diagnosis in Abdominal Trajectories. M. Lick, Erie.—p. 421.

**Complement Fixation Test in Gonorrheal Infection.**—The Hirshlands studied 545 gonococcus complement fixation tests performed on the serum of 227 female patients under controlled conditions in a quarantine station. In interpreting the reports of the complement fixation tests, a test is considered positive if it shows slight inhibition (plus-minus) to complete inhibition of hemolysis (plus 4). A repeated weakly positive reaction is regarded as specific as a strongly positive reaction.

Many cases in the series proved this. The degree of positivity varied with the clinical picture, a plus-minus often occurring in the early stages of a severe infection, at the height of a mild infection, or just before the complement fixation test became negative. Vaginal smears were obtained for examination from the urethra and cervix. It was found that the complement fixation test is of great value in cases of chronic gonorrhea in confirming the clinical diagnosis of gonorrhea or in eliminating its presence. It is of little value in the diagnosis of acute or subacute gonorrhea, with these exceptions: A persistent negative reaction throughout the convalescence indicates a good prognosis, often a cure; on the contrary, a positive test indicates complications and trouble ahead. The complement fixation test for gonococci is valuable in distinguishing between gonorrheal and syphilitic lesions. It is of valuable aid in doubtful diagnosis of chronic lesions, especially when, as in this series, little honest information can be obtained from the patient.

## Philippine Islands Med. Association Journal, Manila

16: 61-132 (Feb.) 1936

- Present Orientation in Control of Malaria in Tropical Countries. A. Ejercito, Manila.—p. 61.  
Our Legal Status as Physicians. L. P. Porras, Iloilo.—p. 73.  
Some Local Problems of the Medical Profession Today. J. C. Nañagas, Manila.—p. 81.  
Studies on Adulteration of Fresh Cow's Milk with Coconut Juice. P. I. de Jesus and S. Jao, Manila.—p. 85.

## Philippine Journal of Science, Manila

58: 425-546 (Dec.) 1935. Partial Index

- Vitamin Contents of Philippine Foods, IV: Vitamins A and B<sub>1</sub> in Various Fruits and Vegetables. A. J. Hermans and P. J. Aguila, Manila.—p. 425.  
Observations on Geographic Distribution of Hookworm Parasites and Hookworm Disease in the Philippines. M. A. Tubangui, M. Basaca, A. M. Pasco and F. del Rosario, Manila.—p. 447.  
\*Purification of Antidysenteric Serum with Sodium Sulfate. O. Garcia, R. Villamil and C. Pañiganban, Manila.—p. 471.  
Three Poisonous Philippine Mushrooms. J. M. Mendoza and Simeona Leus Palo, Manila.—p. 495.  
Some Methods of Circumcision in the Philippines. G. S. Maceda, Manila.—p. 513.

**Purification of Antidysenteric Serum with Sodium Sulfate.**—Garcia and his associates employed a slight modification of the method used by Brunner and Pinkus in the concentration of diphtheria antitoxin with sodium sulfate. By following the original method, the amount of salt in the purified antidysenteric serum after repeated freezing and thawing ranged from 3.99 to 4.08 per cent, and this made the filtration of the serum difficult owing to the concentration of salt and gelatinous proteins that clogged the pores of the filter. Besides this difficulty the filtrate was found to have lost much of its immunologic properties. Instead therefore of freezing and thawing the serum, they dissolved the precipitate in water and immediately dialyzed it for not more than three days. By this method the serum after dialysis contained only an average of 0.12 per cent salt, and it filtered easily through a Seitz filter. In one performance one Seitz filter yielded about 300 cc. of filtrate in from three to four hours. The serum thus prepared possessed high protective properties and compared favorably in potency with the original unconcentrated serum, as shown by the results of protection tests. The purified serum is practically free from sero-albumin.

## Public Health Reports, Washington, D. C.

51: 285-320 (March 20) 1936

- The Picture of Heart Disease Mortality Obtained from Vital Statistics in Washington, D. C., During 1932. O. F. Hedley.—p. 285.  
Distribution of Lymphocytic Choriomeningitis Virus in Organs of Experimentally Inoculated Monkeys. C. Armstrong, J. G. Wooley and R. H. Onstott.—p. 298.  
Pathologic Histology of Lymphocytic Choriomeningitis in Monkeys. R. D. Lillie.—p. 303.

51: 321-362 (March 27) 1936

- Results of Dental Examination of 1,908 White and Colored Males at the Ohio State Reformatory. W. M. Gafaer and C. T. Messner.—p. 321.  
Susceptibility of the Opossum (*Didelphis Virginiana*) to the Virus of Endemic Typhus Fever. G. D. Bringham.—p. 333.  
Strain of Endemic Typhus Fever Isolated from the Brain of a Wild Rat. G. D. Bringham.—p. 337.



**Review of Gastroenterology, New York**

3: 1-98 (March) 1936

- Observations on Physiology and Pathologic Physiology of External Pancreatic Functions. C. W. McClure, Boston.—p. 1.  
Continuous Acid Adsorption by Aluminum Hydroxide Drip in Treatment of Peptic Ulcer. E. E. Woldman and V. C. Rowland, Cleveland.—p. 27.  
Pathologic Physiology of Icterus: II. Mechanism of Jaundice. N. W. Elton, Reading, Pa.—p. 35.  
Electrocholecystectomy. L. R. Whitaker, Boston.—p. 42.  
Postural Defects Related to Gastro-Intestinal Function. E. F. Hartung, New York.—p. 44.  
Some Problems in Treatment of Peptic Ulcer. H. C. Rutherford-Darling, Sidney, Australia.—p. 53.  
Twelve Years of Gastro-Enterology in Mexico. W. Nimch, Mexico. D. F.—p. 58.

**Rhode Island Medical Journal, Providence**

19: 31-42 (March) 1936

- A Visit to Some European Cancer Clinics. H. C. Pitts, Providence.—p. 31.  
Bronchiectasis. E. Windsberg, Providence.—p. 37.  
The Physician in National Defense: Informative Address. G. M. Ekwurzel, Boston.—p. 38.

**South Carolina Medical Assn. Journal, Greenville**

32: 55-82 (March) 1936

- Purulent Pericarditis. L. E. Madden, Columbia.—p. 55.  
The Etiology and Treatment of Peptic Ulcer with an Analysis of Seventy-Five Cases. W. H. Speisegger, Charleston.—p. 61.  
Tuberculosis of the Mammary Gland: Case Report. H. Y. Harper, Anderson.—p. 66.

**Southwestern Medicine, Phoenix, Ariz.**

20: 81-122 (March) 1936

- Conservative Surgical Procedures versus Radical Partial Gastrectomy for Peptic Ulcer. V. C. Hunt, Los Angeles.—p. 81.  
\*Avoidance of Complications of Prostatic Resection. H. C. Bumpus, Pasadena, Calif.—p. 85.  
Simple Description of Silitosis and Its Complications. W. W. Gay, El Paso, Texas.—p. 89.  
Relationship of Psychiatry to the General Practice of Medicine. C. N. Sarlin, Tucson, Ariz.—p. 91.  
Infant Feeding in the First Trimester. C. F. Rennick, El Paso, Texas.—p. 96.  
Luetic Meningitis and Gumma of the Brain: Case Report. H. H. Varner and J. L. Green, El Paso, Texas.—p. 98.  
Studies on Nature of Phagocytosis. Z. M. Flinn, Prescott, Ariz.—p. 100.  
Medicine and Men: Discussion of Compulsory Sickness Insurance. F. E. Sondern, New York.—p. 103.

**Avoidance of Complications of Prostatic Resection.**—Bumpus points out that many of the complications following resection are attributable to errors in the preparation of the patient. In addition to the routine physical examination, roentgenograms of the urinary tract should exclude calculi of the kidneys, bladder and prostate. Unless diverticula are removed, resection will prove a failure as far as relief of symptoms is concerned. If impairment of renal function is great or urinary infection pronounced, transurethral surgery may be contraindicated and suprapubic cystostomy indicated. With suprapubic drainage the possibility of bleeding following resection is considerably reduced, as the patient does not need to void through the urethra until healing is complete. However, it tends to prolong convalescence, for the patient never feels that he has completely recovered until the suprapubic sinus has healed. A cystogram prior to surgery may demonstrate diverticula that do not empty and may demonstrate deformity of the bladder and not infrequently be the first clue of a nerve lesion which, rather than prostatic hypertrophy, may be the cause of the symptoms. It is prior to operation that prophylaxis against infection can best be instituted. The most distressing postoperative complication is incontinence. The proximal boundary of the field of operation is the verumontanum surrounded by the external sphincter. To excise tissue beyond this is to risk incontinence, and to excise the verumontanum is to lose the landmark of the safety zone. In transurethral resection the urethra must receive careful consideration. When this is neglected, stricture, the second most distressing postoperative complication, will inevitably occur. A stricture of the anterior or pedunculous portion of the urethra can never be cured and passage of sounds is a lifelong necessity. If only prostatic tissue is resected, urinary extravasation cannot result, but, if the base of the bladder or the prostatic capsule is perforated, extravasation of urine with all its distressing results is liable to occur. Sepsis, hemorrhage and uremia long associated with postprostatectomy may result but usually are

less severe and more easily controlled after resection. Residual urine and postoperative dysuria are probably more frequent following resection with a loop electrode than following prostatectomy.

**Western J. Surg., Obst. & Gynecology, Portland, Ore.**

44: 133-198 (March) 1936

- Endothelial Tumors. D. Lewis and C. F. Geschickter, Baltimore.—p. 133.  
The Aschheim-Zondek Reaction in Early Diagnosis of Chorio-Epithelioma. E. M. Lazard and F. E. Kliman, Los Angeles.—p. 149.  
\*Pseudo-Icterus of the New Born. S. N. Pierce, Los Angeles.—p. 156.  
Autotransplantation of Ovarian Tissue Following Hysterectomy and Bilateral Oophorectomy. H. N. Shaw, Los Angeles.—p. 165.  
Gonadotropic Hormones: Division I. H. Evans, Berkeley, Calif.—p. 175.  
Lingual Thyroid: Comprehensive Review: Division IV. M. L. Montgomery, San Francisco.—p. 189.

**Pseudo-Icterus of the New-Born.**—Pierce considers a group of cases in which the fetus appears to be jaundiced when it is born and loses most or all of the cutaneous discoloration with the first bath. Instances of this kind are not uncommon, yet they have inspired little comment. He designates the cutaneous manifestation of the syndrome as pseudo-icterus. The bodies of these infants do not show gross anatomic abnormalities. Their color varies from a muddy green to a bright greenish yellow. Because the vernix and the superficial epidermis alone have absorbed the pigments, the skin after cleansing looks normal or only slightly discolored. He cites eight cases which illustrate varying clinical manifestations on the part of the mother and all permit the inference that the fetus was slowly deprived of oxygen owing to an overmature placenta or one impaired by pathologic lesions. He concludes that greenish yellow discoloration of a newly born infant, pseudojaundice which disappears after its first bath, is attributable to the impregnation of the vernix and the superficial epidermic cells with bile pigments from the meconium. Its evacuation into the amniotic fluid, as well as changes of the fetal heart action and premature respiratory movements, occasionally occur well in advance of parturition; they are the consequences of fetal distress. What inaugurates these phenomena remains problematic, but strong suspicion is directed toward the placenta, which may become senile before the onset of labor, especially in cases of postmaturity. The prolongation of pregnancy, which has been described in experimental animals, is attested by the clinical observation of pregnant women.

**West Virginia Medical Journal, Charleston**

32: 149-196 (April) 1936

- Health Promotion by Education. I. Galdston, New York.—p. 149.  
Acute Appendicitis: Experimental Investigations. C. B. Pride and M. A. Rafferty, Morgantown.—p. 157.  
Cardiovascular Roentgenology. V. L. Peterson, Charleston.—p. 161.  
Reduction of Fractures with Local Anesthesia. R. H. Walker, Charleston.—p. 167.  
Gallbladder Disease. C. Crump, Asheville, N. C.—p. 169.  
Present Status of Transurethral Prostatic Resection. H. C. Myers, Philippi.—p. 173.  
The Relation of Physician and Pharmacist. C. L. Jefferies, Bluefield.—p. 177.  
\*Ambulatory Method of Skin Grafting Small Areas by Use of Elastic Adhesive. W. Bronaugh, Belpre, Ohio.—p. 180.  
An Interesting Case of Hysterical Psychoneurosis. J. E. Offner, Weston.—p. 181.

**Method of Skin Grafting Small Areas.**—Bronaugh utilized an elastic adhesive dressing in a case in which pinch grafts were used. The dressing is sufficiently water tight to keep the wound continually bathed in its own secretions. This lymphatic exudate has the necessary bacteriophagic property to destroy ordinary infections present and to prevent bacterial invasion. Also it is the best medium for growth of new delicate epithelial cells. The wounds left by removal of the grafts were also treated with elastic adhesive, exactly as the burned area. At the first dressing, nine days later, seven of them had healed and at the second dressing eighteen days later they were all healed. The patient was active at all times and did not complain of discomfort. The apparent advantages of the method are that it can be an office procedure, the patient is ambulatory, bathing the wound with saline solution is eliminated, and daily inspection and dressing are eliminated. The pressure from the tension dressing keeps the grafts in place, keeps the granulations level and enables epithelization from each graft and the wound edges to occur more rapidly.



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## Archives of Disease in Childhood, London

11:1-48 (Feb.) 1936

- Dwarfism with Retinal Atrophy and Deafness. E. A. Cockayne.—p. 1.  
Value of Estrin for Premature Babies. A. Moncrieff.—p. 9.  
Blood Volume and Circulation Time in Children. H. Seckel.—p. 21.  
Role of Muscle in Obesity. P. Kahn and N. Smith.—p. 31.  
Contribution to Pathology of Identical Twins. Cornelia de Lange.—p. 39.

## British Journal of Dermatology and Syphilis, London

48:53-112 (Feb.) 1936

- \*Leukoplakia Vulvae, Kraurosis Vulvae and Lichen Planus of the Vulva. Elizabeth Hunt.—p. 53.  
\*Factor of Immunity (Serologic) in Furunculosis. J. F. Smith.—p. 54.  
Formation of Cheloids in Relation to Treatment of Lupus Vulgaris. F. F. Hellier.—p. 91.

**Lichen Planus of the Vulva.**—Hunt discusses seventy-three cases of lichen planus of the vulva, of which thirty-three showed some degree of atrophy or contraction of the vulva; viz., "kraurosis." The diagnosis of a lichen planus eruption is often fraught with difficulty when lesions of a rarer type predominate. Lesions were confined to the vulva and adjacent parts in only fifteen of the present cases, and in all the others lichen planus lesions of various types were present at sites remote from the vulva. When it is recalled that a lichen planus eruption may cause no direct or very slight subjective symptoms, the possibility arises that many patients suffering from lichen planus of the vulva never seek advice and that in other cases advanced atrophic changes of the vulva may be found in which symptoms have developed only at a later stage owing to the atrophic changes that have occurred. No causative factors for leukoplakia vulvae have been determined. The etiology of lichen planus is obscure, but ovarian dysfunction has never been suggested as a predisposing factor, since the eruption occurs in both sexes. Derangements of the nervous system following debilitating illness, anxiety, worry and overwork have long been recognized as associated factors in the causation of lichen planus, though many cases are on record in which none of these factors could be determined. Leukoplakia vulvae is stated to be a precancerous condition. Lichen planus is not a precancerous condition. Certain factors may be considered to contribute to the development of epithelioma in atrophic lichen planus lesions on the vulva. When atrophy of the vulva occurs there is increased friction of atrophic surfaces due (1) to the suppression of the secretions, owing to atrophy of the glands, with which the skin of the vulva is well supplied and which keeps the parts well lubricated, and (2) to the absence of the labia minora, which normally provide a soft buffer between the larger labia and protect the vestibule. In addition the dryness of the atrophic surfaces is in many cases aggravated by prolonged and/or ill advised applications for the relief of itching.

**Immunity in Furunculosis.**—Of the sixty-one cases in Smith's series, five were either cases of solitary boils or of several occurring simultaneously. The remaining fifty-six were of the recurrent type, and of these twenty were treated with formoltoxoid. Ten of these twenty were completely cured, four were improved, five were unimproved, and one was cleared but relapsed when local treatment was discontinued. Local treatment was given in all cases. Of thirty-six cases in which only local treatment was given, thirty-three were cured and three unimproved. As local treatment was given in all cases, the slight advantage shown by the cases in which no toxoid was administered is presumably accidental and devoid of real significance, but this investigation has afforded no evidence that injections of toxoid are of material value in the management of recurrent furunculosis, although they have a striking effect in raising the antistaphylococcal content of the serum. The average rise observed was to about sixteen times the original titer. Of four cases treated with autogenous vaccines, two were cured and two unimproved. The antibody titer was raised in one to eight times and in another to twice the original figure, while the remaining two showed no rise. This variation in the antigenic powers of different strains suggests that, if a

vaccine is to be used at all, a good stock one, made from a strain of proved antigenic power, is likely to act better than an autogenous one. The case that showed the highest rise was unimproved, and one of the two that were cleared relapsed later and was not helped by a long series of injections of a so-called dissolved vaccine. The only permanently cured patient of the four was the one who showed no antibody response. Severe reactions to injection of the toxoid were uncommon. The whole trend of the investigation emphasizes the importance of local factors and the relative unimportance of the "immune state" of the patient, in dealing with furunculosis. Glycosuria, of course, is an occasional factor of prime importance and has been excluded from the present series.

## British Journal of Experimental Pathology, London

17:1-86 (Feb.) 1936

- Typhus Group of Diseases in Malaya: Part I. Study of Virus of Rural Typhus in Laboratory Animals: Part II. Study of Virus of Tsutsugamushi Disease in Laboratory Animals. R. Lewthwaite and S. R. Savor.—p. 1.  
Id.: Part III. Study of Virus of Urban Typhus in Laboratory Animals. R. Lewthwaite and S. R. Savor.—p. 23.  
Determining Group of Human Blood Stains: Notes on Anomalous Group O Serum. D. Harley.—p. 35.  
Immunologic Study of Typhoid Polysaccharide. N. N. Spassky and L. A. Danenfeldt.—p. 38.  
Detection of Antigenic Differences in Mouse Erythrocytes by Employment of Immune Serums. P. A. Gorer.—p. 42.  
Sizes of Viruses of Human and Swine Influenza as Determined by Ultrafiltration. W. J. Elford, C. H. Andrewes and F. F. Tang.—p. 51.  
Comparative Studies of Louse-Borne (Epidemic) and Flea-Borne (Murine) Typhus Viruses. I. J. Kligler, M. Aschner and Sonia Levine.—p. 53.  
Production of CBA Strain of Inbred Mice: Long Life Associated with Low Tumor Incidence. L. C. Strong.—p. 60.  
Experiments on Chemical Behavior of Potato Virus X. F. C. Bawden and N. W. Pirie.—p. 64.  
\*Carbonic Anhydrase Content of Blood in Pathologic States in Man. T. H. Hodgson.—p. 75.  
The Vi Antigens of Various Salmonella Types. A. Felix and R. Margarett Pitt.—p. 81.

**Carbonic Anhydrase Content of Blood in Pathologic States.**—Hodgson followed the distribution of carbonic anhydrase in the blood of normal subjects and in patients with various pathologic conditions. The amount of carbonic anhydrase varies over a wide range from 4.7 to 27 units in 10 cu. mm. of blood as compared with a range of from 13.9 to 17.5 units for normal subjects. The hematocrit values for the two groups range respectively from 12 to 60 and from 40 to 47 per cent of cells. Since cases are encountered that have a very low absolute carbonic anhydrase content in the blood and yet do not show marked impairment of respiratory function, it is reasonable to infer that in normal individuals there must be a considerable excess of enzyme over ordinary requirements. The data in the main show a rough correspondence between carbonic anhydrase and readings of the hematocrit. The most obvious condition in which to find an abnormal anhydrase content would be anemia. Low absolute values for carbonic anhydrase are shown in all cases except one—a case of pernicious anemia. This case showed 20.7 units of anhydrase, an icteric index of 21 and a reticulocyte count of 19 per cent. Another case of pernicious anemia showed 6.1 units of anhydrase, but only an occasional reticulocyte was present. The high anhydrase value of the former case may thus possibly be related to the number of reticulocytes present in the blood. All the other cases of anemia show low anhydrase values, and thus there is a rough correspondence between the low anhydrase content and the low hematocrit reading. However, the anhydrase index is on the average higher than for the normals, and the inference is that the blood corpuscles, less in number, are carrying more anhydrase. Five cases of cyanosis show an increased amount of carbonic anhydrase in the blood. All these cases except one show an increase in the hematocrit reading. The exception is a case of cyanosis from acetanilid poisoning, which gave a positive test for methemoglobin in the blood. A case of polycythemia vera, although having the highest hematocrit reading, has an anhydrase content only proportionately high, thus giving an anhydrase index within the normal range. All the cases of jaundice have raised anhydrase values and at the same time normal hematocrit readings, with the result that the anhydrase indexes are raised above the normal in every case. It is pos-

sible that this observation may be due to the lowering of surface tension caused by the presence of bile salts. If in vivo the enzyme is within the corpuscle, the substrate must diffuse inside the cell in order that the reaction may take place; if, on the other hand, the enzyme is located on the surface of the corpuscle, a decrease of surface tension might facilitate the reaction between enzyme and substrate. This increase in carbonic anhydrase in jaundice would thus seem to favor the supposition that the enzyme is situated at the surface of the corpuscle.

### British Journal of Radiology, London

9: 71-142 (Feb.) 1936

- Forty Years of Radiology (1895-1935): Review and Some Reminiscences. G. W. C. Kaye.—p. 76.  
Calcium Changes and Their Importance in Diagnostic Radiology. G. H. Orton.—p. 102.  
\*Chronic Infection of Sacro-Iliac Joints as Possible Cause of Spondylitis Adolescents. S. G. Scott.—p. 126.  
Radiation Treatment of Breast Cancer. G. Vilvandré.—p. 132.

**Chronic Infection of Sacro-Iliac Joints and Spondylitis Adolescents.**—Scott asserts that the onset of spinal symptoms signifies not the commencement of the disease but the final stages of a long standing pathologic condition. The primary cause of spinal arthritis of the young adult is in some way connected with an infection of the sacro-iliac joints, but in many instances they would seem to account for the recurrent attacks of so-called muscular rheumatism so frequently encountered in the young adult. The history of many of these cases goes to show that during the prespondylitic period the pains and aches that these patients experience are mistaken for various diseases. If the early stages of this infection of the sacro-iliac joints—the precursor of spondylitis adolescents—is to be detected, a routine roentgenographic examination of these joints must be carried out in every case in which recurrent attacks of muscular rheumatism, extending over a number of years, occur in the young adult. The roentgenographic interpretation of the sacro-iliac joints is difficult, and the recognition of early pathologic changes requires considerable experience; the age of the patient must be taken into consideration, as in early life the appearances of the sacro-iliac joints suggest some abnormality. Care must also be taken that the roentgenogram is standardized technically. The prognosis is bad, but it may be more hopeful in the same way as the removal of an infected appendix, gallbladder or tooth may influence a general arthritis, if the cause of the disease can be found and removed.

### British Medical Journal, London

1: 245-294 (Feb. 8) 1936

- Intestinal Obstruction. R. Warren.—p. 245.  
Iridocyclitis. J. H. Doggart.—p. 249.  
\*Hydrated Magnesium Trisilicate in Peptic Ulceration. N. Mutch.—p. 254.  
Estrogenic Action of Compounds of Androsterone-Testosterone Series. R. Deanesly and A. S. Parkes.—p. 257.  
Immunization by Oral Route in Respiratory Infections, with Especial Reference to Influenza, Colds and Their Complications. D. Thomson, R. Thomson and E. T. Thompson.—p. 258.

### Hydrated Magnesium Trisilicate in Peptic Ulceration.

—Mutch points out that the presumptive suitability of hydrated magnesium trisilicate for the treatment of chronic peptic ulceration in the stomach, duodenum and jejunum depends on a combination of properties: 1. Its antacid power is sustained for hours in the presence of an excess of acid. This facilitates the continuous control of hyperchlorhydria in the gastric contents as a whole and also furnishes a basis for local antacid therapy in the floor of the ulcer. In the presence of acid the trisilicate acquires a gelatinous consistency and, if any of the mass lodges in the crater of the ulcer, it will progressively neutralize the acid which diffuses through it. 2. Its adsorbent power is sustained and cannot be exhausted in a few hours, and it cannot be saturated with foodstuffs adsorbed from the gastric contents. A great reserve will always be left for the removal of soluble necrotic products at the site of the ulcer and of toxic substances in general. 3. It has strong antipeptic powers available for the protection of the base of the ulcer from destructive digestion. 4. As its antacid power is utilized, hydrated silica is liberated in a form possessing strong adsorptive affinities for pepsin, food poisons and other substances. This activity of the end product intensifies the absorbent effect of the magnesium

trisilicate. 5. It can be given in large doses without disturbing the general motility of the digestive tract. It does not cause either constipation or diarrhea. 6. No matter how much may be given it cannot reduce the gastric reaction materially below the neutral point. 7. Being insoluble in water, any unused excess is voided in the stools. It cannot be absorbed and so produce direct alkali poisoning. Fifteen patients with chronic peptic ulceration were treated with synthetic magnesium trisilicate. No other antacid preparation was employed. In every case the desired result was obtained with doses not exceeding 16 grains (1 Gm.) (anhydrous weight), but with very high acid figures it would appear advisable to use a higher scheme of dosage.

### Glasgow Medical Journal

7: 49-96 (Feb.) 1936

- "Secondary" Pellagra. I. Murray.—p. 49.  
Spirochetal Jaundice (Weil's Disease): Investigation of Case. Grace A. Kerr.—p. 59.

### Guy's Hospital Reports, London

85: 377-506 (Oct.) 1935

- Studies on Tumor Formation. G. W. Nicholson.—p. 379.  
Cerebrospinal Meningitis, with Especial Reference to Treatment of Associated Hydrocephalus. A. C. Hampson.—p. 431.  
New Study of Heat Production in Man. T. W. Adams and E. P. Poulton.—p. 447.  
The St. Cyres Lecture on Etiology of Cardiac Arrhythmias. M. Campbell.—p. 471.

### Indian Journal of Medical Research, Calcutta

23: 573-836 (Jan.) 1936

- Racemization of Proteins of Vibrio Cholerae and Related Organisms: Part I. Diamino Acids. B. N. Mitra.—p. 573.  
Id.: Part II. Monamino Acids. B. N. Mitra.—p. 579.  
Respiration and Glycolysis of Cholera and Cholera-like Vibrios. R. W. Linton, B. N. Mitra and D. N. Mullick.—p. 589.  
Further Notes on Cholera and Cholera-like Vibrios. R. W. Linton, B. N. Mitra and S. C. Seal.—p. 601.  
Experimental Observations on Cholera Vaccine. J. Taylor, M. L. Ahuja and G. Singh.—p. 609.  
Comparative Study of Certain Selective Mediums Used in Water Analysis, Together with Review of Literature on Subject. T. N. S. Raghavachari and P. V. Seetharama Iyer.—p. 619.  
Improved Technic for Isolation of Ascaris Eggs from Soil. P. A. Maplestone and P. K. Mukerji.—p. 667.  
\*Studies in Serology of Syphilis. C. C. Basu and H. N. Chatterjee.—p. 673.  
Blood Groups of Angami Naga and Lushai Tribes. P. N. Mitra.—p. 685.  
Favus in India. N. C. Dey and P. A. Maplestone.—p. 687.  
Studies on Typhus in Simla Hills: Part I. Introduction. G. Covell.—p. 701.  
Id.: Part II. Weil-Felix Reaction in Wild Rats. G. Covell.—p. 709.  
Id.: Part III. Strain of Typhus Recovered from Wild Rats. G. Covell.—p. 713.  
Spontaneous Tuberculosis in Laboratory Monkeys. K. V. Krishnan.—p. 721.  
Investigation of Cheap Well Balanced Diets. W. R. Aykroyd and B. G. Krishnan.—p. 731.  
Carotene and Vitamin A Requirements of Children. W. R. Aykroyd and B. G. Krishnan.—p. 741.  
Observations on Heart Rate in Vitamin B<sub>1</sub> and C Deficiency. G. Sankaran and B. G. Krishnan.—p. 747.  
Further Studies on Effect of Storage on Vitamin C Potency of Foodstuffs. S. Ranganathan.—p. 755.  
Biologic Assay of Vitamin A in Diet of Indians. Ella Surie.—p. 763.  
Biochemical Investigations on Different Varieties of Bengal Rice: Part III. Enzymic Digestibility of Rice Starch and Protein: Action of Salivary and Pancreatic Amylase as Well as of Pepsin and Trypsin. K. P. Basu and S. Mukherjee.—p. 777.  
Biologic Value of Proteins of Green Gram (*Phaseolus Mungo*) and Lentil (*Lens Esculenta*): Part I. By Balance Sheet Method. K. P. Basu, M. C. Nath and M. O. Ghani.—p. 789.  
Id.: Part II. Measured by Growth of Young Rats. K. P. Basu, M. C. Nath and M. O. Ghani.—p. 811.  
Enzymic Digestibility of Pulses: Action of Salivary and Pancreatic Amylase and of Proteolytic Enzymes Pepsin and Trypsin. K. P. Basu and S. Mukherjee.—p. 827.  
\*Relation Between Composition of Diet and Urinary Excretion of Ascorbic Acid. R. K. Chakraborty and A. N. Roy.—p. 831.

**Studies in Serology of Syphilis.**—Basu and Chatterjee studied the serums of 561 cases by means of two modifications of complement fixation tests and two flocculation tests. An endeavor has been made to modify the complement fixation test in the light of recent work on serology. No single test has been able to diagnose all the cases of clinically known syphilis; the combination of more than one test is recommended. Quantitative complement fixation tests with variations in serum have given much more satisfactory results than those in which varia-

tions in complement are used. Judged from the point of view of sensitiveness the authors place the tests in the following order: serum dilution method (complement fixation), Harrison's method (complement fixation), Meinicke-Klarungs reaction II (flocculation) and Kahn standard test (flocculation). The Meinicke-Klarungs reaction II is more sensitive than the Kahn test but has a tendency to give more nonspecific positive reactions in epidemic dropsy and cancer cases, a point that ought to be investigated. About 3.5 per cent of cases of clinically known syphilis still remained undetected even when multiple tests were done, neurosyphilis constituting 2 per cent and other varieties 1.5 per cent. Malaria and kala-azar do not seem to have any effect on the tests.

**Relation Between Diet and Urinary Excretion of Cevitamic Acid.**—Chakraborty and Roy investigated the relation between the ingestion of high carbohydrate, high protein and high fat diets and the urinary excretion of cevitic acid on two healthy Bengali young men. In the first subject they observed the average daily urinary output of cevitic acid to be 9.54 mg. on the usual Bengali high carbohydrate diet; it rose to 12.07 mg. on the meat diet. It fell to 10.21 mg. when the subject was placed again on the usual high carbohydrate diet but rose again to 14.09 mg. on the high fat diet. On the resumption of the ordinary diet it fell to 9.57 mg., and it again rose to 14.65 mg. when the subject was placed on a casein diet. In the second subject the usual high carbohydrate diet gave a cevitic acid value of 9.75 mg., which rose to 11.08 mg. on a meat diet. A period of the usual high carbohydrate diet brought the level down to 8.51 mg., which rose again to 14.8 mg. on a high fat diet. On being diverted to the usual high carbohydrate diet, the level fell to 10.46 mg. and rose again to 13.12 mg. on a casein diet. It is not improbable that the higher figures for the urinary excretion of cevitic acid in England, as given by Harris and Ray, are due to the greater consumption of meat in that country. The relatively lower figures obtained by the authors do not necessarily indicate vitamin C subnutrition, as in some unpublished experiments they have found that a sharp peak is produced in the urinary excretion of cevitic acid on the ingestion of extra vitamin C. It appears possible that cevitic acid has some special rôle in the metabolism of fat and protein. The possibility of the presence of other reducing substance or substances in the urine, which might complicate these results, is under investigation.

### Irish Journal of Medical Science, Dublin

No. 121: 1-48 (Jan.) 1936

- Some Present Day Public Health Problems. J. A. Harbison.—p. 1.  
Radiology: Past and Present. C. L. McDonagh.—p. 7.  
Attitude of the Obstetrician to Surgery During Pregnancy. R. M. Corbet.—p. 16.  
Agranulocytic Angina. T. G. Wilson.—p. 20.  
Choice of Operation in Treatment of Genital Prolapse. J. F. Cunningham.—p. 24.

### Journal of Mental Science, London

82: 1-98 (Jan.) 1936

Causation of Mental Symptoms: Inquiry into Psychiatric Application of Hughlings Jackson's Views on Causation of Nervous Symptoms, with Particular Reference to Their Application to Delirium and Schizophrenia. M. Levin.—p. 1.

- \*Sinus Sepsis and Mental Disorder. R. E. Jowett.—p. 28.  
Body Length-Leg Ratio in General Population and in Mental Hospital Patients and Its Possible Significance in Suicide. H. P. Strecker.—p. 38.  
Potential Use of Temporary Treatment: Note. J. K. Marshall.—p. 43.  
Some Methods and Problems of Psychotherapy. W. L. Neustatter.—p. 47.

**Sinus Sepsis and Mental Disorder.**—Jowett examined 500 routine cases of mental disease and found nasal sinus infection in 7.6 per cent. This percentage is compared with a similar one found in a similar series of cases in which similar criteria were used. It shows only a slight difference. In a control series of 184 mentally normal individuals the incidence of sinus suppuration was found to be not less than 5 per cent. Pioneer workers in this field reported a higher incidence. Their observations have promoted general investigation of the nasal accessory sinuses in mental disorder. Although subsequent investigations may prove a lower incidence of sinus disease in mental hospital patients than at first found, an incidence of up to 10 per cent infection demands investigation and treatment on

grounds of general and possible local disorder. It is concluded that the incidence of sinus disease in mental disturbance is not greater to any appreciable degree than among the general population.

### Lancet, London

1: 295-348 (Feb. 8) 1936

- Maternal Mortality in Hospital: Review of Nine Hundred and Ninety-Nine Fatal Cases in the Glasgow Royal Maternity and Women's Hospital During Ten Years, 1925-1934. D. Baird.—p. 295.  
Chronic Cicatrizing Enteritis: Phase of Benign Nonspecific Granuloma of Small Intestine. R. F. Barbour and A. B. Stokes.—p. 299.  
Acriflavine as Urinary Antiseptic. E. W. Assinder.—p. 304.  
\*Inborn and Familial Tendency to Development of Hepatic Cirrhosis. F. P. Weber.—p. 305.  
Modern Views on Hypertrophy of Prostate. P. Niehans.—p. 307.

**Familial Tendency to Hepatic Cirrhosis.**—Weber states that cases of hepatic cirrhosis in children, not due to alcohol or congenital syphilis or any known cause of cirrhosis, are usually regarded as the manifestation or one of the manifestations of a congenital-developmental disease, and the occasional familial incidence of cirrhosis has often been adduced in support of this view. He discusses the data in favor of there being an inborn tendency to hepatic cirrhosis and arranges his remarks under two headings: (1) examples of the familial incidence of hepatic cirrhosis, in which the cirrhosis has not been due to any known exciting cause, such as alcohol or syphilis, or in which an inborn familial tendency to the disease may be presumed because an exciting cause, such as alcohol, though present in one of the affected members of the family was absent in others; and (2) examples of hepatic cirrhosis accompanying and probably constituting a part of acknowledged diseases of the congenital-developmental class. Under congenital-developmental diseases and abnormalities he includes all truly inborn abnormalities and constitutional diseases, whether obvious at birth or manifesting themselves later at various ages (hemophilia, hemolytic [acholuric] jaundice, congenital porphyria, amaurotic family idiocy, renal glycosuria, food idiosyncrasies and allergic peculiarities).

### Medical Journal of Australia, Sydney

1: 153-186 (Feb. 1) 1936

- Diet and Disease in Childhood. P. A. Earnshaw.—p. 153.  
Diet and Disease in Later Life. C. Sippe.—p. 156.  
Diet and Disease of Eye. E. O. Marks.—p. 157.  
Suggestions for Reform in Nutrition. N. M. Gutteridge.—p. 159.  
Diet in Disease. E. L. Cooper.—p. 163.  
Relationship of Pituitary Gland to Carbohydrate Metabolism. A. B. Corkill.—p. 168.

### South African Medical Journal, Cape Town

10: 83-118 (Feb. 8) 1936

- A School of Hygiene. F. Daubenton.—p. 85.  
Endometriosis. E. S. van der Merwe.—p. 86.  
The Medical Aspect of Gonorrheal Rheumatism. P. Bayer.—p. 89.  
Treatment of Gonorrhea in the Male. H. Gluckman.—p. 91.  
Recent Advances in Schistosomiasis. F. G. Cawston.—p. 93.  
Radium and X-Ray Treatment of Cancer. J. van Rooijen.—p. 93.

### Japanese Journal of Obstetrics & Gynecology, Kyoto

19: 1-76 (Jan.) 1936

- Histologic Study of Peripheral Nerve in Human Female Genitals. M. Ozaki.—p. 2.  
Effect of Colloidal Heavy Metals to Growth of Transplanted Tumors and Their Radiosensitivity. T. Kikuchi.—p. 33.  
\*Two Cases Showing Symptoms and Signs of Slight Degree of Ileus During Pregnancy. T. W. Yun.—p. 51.  
Anatomic Study of Conduction System of Heart in the Human New-Born and Fetus. K. Matsuda.—p. 57.

**Slight Degree of Ileus During Pregnancy.**—Yun presents two cases showing a slight degree of ileus during pregnancy due to an abnormal condition of the sigmoid flexure. The two showed classic signs and symptoms, and they were quite easily diagnosed. The sigmoid was enlarged and elongated, the junction between the descending colon and the sigmoid was sharply flexed, and a slight degree of torsion was present. Severe abdominal pain, distention of the abdomen, nausea, vomiting and headache were present. The ileus occurred at the sixth and the seventh month of pregnancy, respectively. If acute ileus with grave symptoms and signs is present, operation is indicated. In many cases the prognosis is bad, but in one of the author's cases a good result was obtained with medical treatment. Correct diagnosis is imperative and can be facilitated roentgenologically.

**Presse Médicale, Paris**

44: 353-376 (March 4) 1936

- Dilatation of Bronchi: Congenital Malformation. R. Debré.—p. 353.  
 \*Fictitious Asepsis and Total Sterilization. M. Gudin.—p. 355.  
 Treatment of Fractures of Maxillary Condyles. L. Lebourg.—p. 360.

**Total Sterilization.**—Gudin discusses in some detail the fact that asepsis in operating rooms is less satisfactory than is generally believed. It is because of this fictitious asepsis that bacteriologic complications of operations are still so common. He has attempted to correct this situation by hermetically sealing his operating room and sterilizing the air in it by means of formaldehyde. In order to neutralize the toxic gas, an exactly proportional dose of ammonia is later introduced. Finally the air is filtered through a solution of tartaric acid in sterilized water. The results of the systematic application of this system were as follows: 1. Pure cicatrization without microbial interference was constantly observed. 2. The serous and bloody exudates were naturally resorbed as soon as their drainage became unnecessary from the standpoint of infection. 3. Nonresorbable foreign bodies remained well tolerated in the organism. 4. Drainage was no longer a factor of contamination. 5. The regions previously contaminated did not receive further contamination from the air. He believes that the true asepsis which he can now create introduces a new period into the practice of surgery.

44: 377-400 (March 7) 1936

- \*Endocrine Hepatocardiac Syndrome. L. de Gennes, J. Delarue and R. de Véricourt.—p. 377.  
 Fundamental Elements of Treatment of Poliomyelitis. E. Terrien.—p. 381.

**Endocrine Hepatocardiac Syndrome.**—De Gennes and his collaborators studied a syndrome characterized by the existence and simultaneous development of a cirrhosis with cutaneous pigmentation, stigmas of infantile regression and, finally, severe cardiac insufficiency. Two observations are reported in which these three elements were found to be almost identical. It was impossible to determine their clinical order but the endocrine signs were apparently the first and preceded by a considerable period the appearance of pigmentation, the enlarged liver and the cardiac insufficiency. The syndrome affects boys primarily. Thorough histologic examination of the tissues in such cases indicates a typical cirrhotic pigmentation, extensive endocrine lesions (especially of the pancreas, thyroid, suprarenals and testicles) and an atonic dilatation of the heart with sound myocardial tissue. It is uncertain whether the endocrine lesions are at the basis of the clinical syndrome and are sufficient to explain the cirrhosis and the myocardial damage. The authors believe that this question is a matter well worth further study.

**Riforma Medica, Naples**

42: 385-420 (March 21) 1936

- Oriel's Substance. R. Silvestrini.—p. 387.  
 \*New Method for Determination of Dextrose in Urine. A. Gugliucci.—p. 389.  
 Activity of Thyroid Under Influence of Treatment at Salsomaggiore Springs. V. De Blasi and F. Introna.—p. 392.  
 Sign of Gastro-Intestinal Perforation in Inguinal Hernia. G. Casciari.—p. 411.

**Method for Determination of Dextrose in Urine.**—Gugliucci describes a new method for quantitative determination of dextrose in the urine. It is based on the phenomenon of disappearance of the yellow in a potassium ferricyanide solution when dextrose is added to it at a high temperature. The phenomenon is due to the reduction of potassium ferricyanide by dextrose to potassium ferrocyanide. The reagent consists of a solution prepared with 9.90 Gm. of potassium ferricyanide, 60.85 Gm. of anhydride of sodium carbonate and a sufficient quantity of distilled water to make up 1,000 cc. of the solution. The solution is of an intense yellow and is stable. If 100 cc. of the solution is heated to the boiling point and a 1 per cent solution of dextrose is added drop by drop, the yellow disappears from the solution when enough dextrose has been added to make 0.01 Gm. The technic of the reaction is as follows: Ten cubic centimeters of the reagent is placed in a large test tube and brought to the boiling point. The sample of urine is added quickly drop by drop from a pipet graduated in hundredths

of a cubic centimeter. After each drop is added, the solution is heated and its color examined until the yellow in it fades notably. The solution is kept boiling for a few seconds and allowed to cool. One then observes that the solution is no longer yellow. The quantity in cubic centimeters of urine is read from the pipet and in this manner the amount of dextrose in the urine is calculated. The calculation is made by dividing 10 (which is the amount of reagent solution used) by the number of cubic centimeters of urine added to it to produce the reaction. The result represents the amount of dextrose in grams contained in 1,000 cc. of urine. The reaction is visible under natural and electric light, and it is stable. It can be done with all the refinements used in other known methods of quantitative determination of sugar in urine; that is, dilution of the urine to one tenth in cases of notable glycosuria, purification of the urine when it contains large quantities of reducing substances and also dealbumination of it. The reaction gives results as exact as those given by other known methods, but it has the advantage over the others of its easier technic, rapid results and the use of only one reagent which is not expensive.

**Archiv für Kinderheilkunde, Stuttgart**

107: 193-256 (March 17) 1936

- Prognosis and Treatment of Empyema During Nursling Age. S. Fleisch.—p. 193.  
 \*Pulmonary Abscesses During Childhood. R. Priesel.—p. 204.  
 \*Disorders of Accessory Sinuses in Nurslings. Hildegard Schönberg.—p. 216.  
 Studies on Pharmacology and Pharmacodynamics of Childhood: Action of Febrifuges on Basal Metabolism of Febrile Children. G. Petrányi and A. Bános.—p. 220.  
 \*Roentgen Irradiation of Erysipelas in Nurslings and Children. P. Sonnauer.—p. 225.  
 Studies on Number of Thrombocytes During Childhood. F. Becker.—p. 230.  
 Rare Forms of Nevi During Childhood. R. Steindler.—p. 237.

**Pulmonary Abscesses During Childhood.**—Priesel shows that postpneumonic pulmonary abscesses in children usually yield to purely conservative measures which aim at an improvement of the general condition and at an increase in the defense powers of the organism. Observations in twenty cases of postpneumonic pulmonary abscesses demonstrate that such measures nearly always result in cure. In pulmonary abscesses caused by aspiration of foreign bodies, conservative treatment is not enough and treatment by a specialist is necessary. Pulmonary abscesses, which develop metastatically by way of the blood stream from a suppurative focus (for instance in malignant mastoiditis with sinus thrombosis, in furunculosis or osteomyelitis) and are frequently multiple, have a rather unfavorable prognosis, although recovery occasionally occurs even in these malignant cases.

**Disorders of Accessory Sinuses in Nurslings.**—In the course of necropsies on 232 nurslings, Schönberg detected 154 with empyema of one or several of the accessory sinuses. The incidence of the sinus complications was especially great in the dyspeptic children and the question arises whether there is an etiologic connection between dyspepsia and empyema of the sinuses. The author suggests that, in view of the parenchymatous impairment of the liver existing in the majority of cases of dyspepsia, it may be assumed that, following a coryza or after another slight cold, empyema of the accessory sinuses develops which, particularly in the cases of otitis media, attacks the adjoining bone. This process is often slow and may cause only slight elevation of temperature. Depending on the duration and severity of the process, impairment of the liver results, which in turn manifests itself in a digestive disturbance. The author admits that these studies are still inadequate, but she stresses that in nurslings a cold or a coryza is not as insignificant a matter as is often assumed, as it may lead to empyema of the maxillary sinus or to disorders of the middle ear. With regard to the treatment of the sinus disorders in nurslings, she says that short wave therapy is advisable. Moreover, in nurslings with dystrophy, treatment of the liver by means of dextrose may perhaps prove helpful in addition to the usual measures.

**Roentgen Irradiation of Erysipelas in Nurslings.**—Sonnauer asserts that erysipelas is extremely serious in nurslings, for the mortality rate is high. According to most statistics it

is more than 50 per cent for nurslings less than 6 months old. In order to improve this unfavorable prognosis, the author decided to resort to roentgen therapy, which, according to numerous reports, had produced favorable results in erysipelas of adults. The treatments were given with a tension of 170 kilovolts through a filter of 0.5 mm. of zinc, at a focus-skin distance of 30 cm. and with an intensity of 28 roentgens per minute (measured in the air). The dose for each field was usually from 80 to 100 roentgens. The rays were applied not only to the area involved by the erysipelas but also to two fingerbreadths of the surrounding healthy tissues. The author cites a number of cases that demonstrate the favorable results of this treatment. One or two irradiations were usually effective. After from twenty-four to forty-eight hours there was usually a lytic reduction in fever and further extension of the process ceased, the redness of erysipelas being replaced by a reddish brown. The author advises that, if these effects fail to appear, the irradiation should be repeated after two or three days. He employed the roentgen treatment in twenty-seven cases. In seven of these the erysipelas was the partial manifestation of a generalized sepsis, the children being admitted to the hospital in a moribund condition. These died one or two days after the irradiation. However, of the other twenty cases (thirteen nurslings and seven children) only one terminated fatally and the other patients recovered.

### Beiträge zur Klinik der Tuberkulose, Berlin

87: 519-646 (March 21) 1936. Partial Index

- Pneumothorax or Thoracoplasty in Case of Large Cavities? J. Mille.—p. 535.
- \*Tuberculous Bronchostenosis and Its Differentiation from Bronchial Carcinoma. F. Fleischner.—p. 553.
- Framework Systems of Lung and Their Physiologic and Pathologic Significance. F. Orsós.—p. 568.
- Pathogenesis of Bronchiectases. M. Kartagener.—p. 610.
- \*Is Sexual Urge Increased in Patients with Tuberculosis? D. Barglow-ski.—p. 615.
- Thoracoscopy and Thoracocautery in General Hospital. A. Böhme.—p. 627.
- \*Active Diphtheria Immunization of Tuberculous Children. H. Starcke.—p. 634.

**Tuberculous Bronchostenosis and Bronchial Carcinoma.**—On the basis of two cases, which were under observation for a long time and were anatomically investigated, Fleischner describes the clinical aspects of tuberculous bronchostenosis that leads to complete closure. Tuberculous anthracotic proliferations that originate in the tracheobronchial lymph nodes lead to deforming bronchitis and progressively to severe stenosis of the lobar bronchus. These changes are apparently most frequent in the middle lobe of the right side. As a result of the stenosis, atelectasis or atelectatic pneumonia develops in the pulmonary lobe and, finally, a permanent induration of the lobe. In rare cases the closure causes suppurating bronchitis, abscesses and gangrene. But there is also the possibility of a flare up of the tuberculosis and of cessation and softening. Clinically, the patients present the signs of old hematogenic tuberculous changes, such as apical and pleural indurations, calcified pulmonary and glandular foci, indurative mediastinitis, adhesive esophageal diverticula, esophagobronchial fistulas and extrapulmonary foci. During the early period of the disease a dry cough develops and occasionally there is hemorrhagic sputum. Dyspnea appears as a rule quite suddenly. This is the time of the development of the lobar atelectasis. It may take place without general manifestations or it may be accompanied by chills and fever and present the aspects of lobar pneumonia. In the first case the disease results in the development of lobar cirrhosis and the author thinks that many of the so-called hepatization pneumonias are postbronchostenotic lobar cirrhoses. In the second case there develops a chronic disorder characterized by irregular attacks of fever, and, if the course is unfavorable, suppurating bronchitis, abscess formation and gangrene may occur; in other cases it is the first sign of a flare-up tuberculosis that presents the aspects of the generalized phthisis of the aged. Concerning the diagnosis it may be said that one lobe, usually the middle one, shows greater density. Bronchostenosis can be recognized by auscultation, by the weakened or abolished respiratory sound, by the

roentgenologic sign of mediastinal oscillation, and finally by bronchography. A tuberculosis in the anamnesis and the course the disorder takes permit only a conjectured differentiation from bronchial carcinoma as the most frequent cause of a bronchostenosis and from other rarer forms of inflammatory or tumorous bronchostenosis. A definite differentiation is possible only by means of bronchoscopy and biopsy. Compared with the incidence of cancerous bronchostenosis, the tuberculous form is rare.

**Sex Urge in Patients with Tuberculosis.**—Barglowski reports the results of anamnestic studies on the sex life of twenty patients with tuberculosis. He found not a single case in which it could be definitely proved that the tuberculosis caused an increase in the sexual urge. In a few cases there were some indications, but he suggests that even in these cases the tuberculosis was at most a factor in the tendencies to which the person had been disposed before the development of the tuberculosis. Relations of the sex urge to a toxic or a nontoxic course of the tuberculosis could not be detected. The author attempts to show in what manner the widely accepted opinion of an increase of the sex urge may have arisen. He calls attention to some external factors, such as the development of tuberculosis at the time of puberty when the sex urge develops. He mentions the importance of the constitutional type for the development of tuberculosis (large number of leptosomes) as well as for the characterologic development and the sexual behavior, pointing out that a greater sexuality may be the result of schizothymia rather than of tuberculosis. Observations on some cases indicated that the lack of interests and occupation influences the behavior of the sexual urge.

**Active Diphtheria Immunization of Tuberculous Children.**—To prevent the further spreading of diphtheria in a sanatorium for tuberculous children, active immunization was resorted to by Starcke. However, he found that, of 100 children who were given three injections of 1 cc. of diphtheria toxoid, five showed exacerbations of the tuberculous process after the third injection. After that he used the milder acting toxoid-antitoxin floccules, but of thirty-five children who were immunized in this manner one showed a considerable exacerbation of the tuberculous process after the third injection. He maintains that the further spreading of the tuberculous process is the result of the reduction in the resistance that is involved in the immunization. He concludes that, in the form of the triple injection, toxoid as well as toxoid-antitoxin floccules is dangerous for children with active tuberculosis.

### Klinische Wochenschrift, Berlin

15: 401-432 (March 21) 1936. Partial Index

- Tumor-like Formations in Adrenal Medulla as Result of Experimental Nicotine Intoxication. M. Staemmler.—p. 404.
- \*Vitamin C and Antithyroid Action. A. Schäfer.—p. 406.
- \*Alimentary Increase in Blood Sugar in Renal Diseases and Its Significance for Sugar Metabolism. F. Oefelein.—p. 407.
- Further Development of Diaphanoscopy in Gynecology. E. Kjaften.—p. 409.
- Ischemia of Pulmonary Tissues and Their Sequels. C. E. Schuntermann.—p. 413.
- Vitamin C Deficit During Pregnancy. G. Török and L. Neufeld.—p. 417.

**Vitamin C and Antithyroid Action.**—Schäfer directs attention to studies by Demole and Ippen which demonstrated that, in the case of simultaneous administration of vitamin C (cevitamic acid) and thyroxine, vitamin C counteracts the effects of thyroxine. Other studies conducted by these authors demonstrated that under the influence of thyroxine the vitamin C contents of liver and spleen disappear. On the basis of these observations, it was assumed that vitamin C has an antithyroid action and that its application is justified in cases of exophthalmic goiter. Other investigators had observed a similar antagonistic behavior between thyroxine and carotene or vitamin A. In view of the results obtained by Demole and Ippen and of the action of vitamin A, Schäfer decided to investigate the point of attack of vitamin C as well as the justification of its use in exophthalmic goiter. He has studied vitamin C in the histologic thyroid test on guinea-pigs, as well as by means of Gundersen's tadpole test, and reaches the conclusion that vitamin

C has no antithyroid action and that consequently it cannot be used to influence the thyroid. Although an unqualified assertion that these results apply also to human subjects is not permissible, it can nevertheless be assumed by analogy with pharmacologic observations on thyroid extracts that vitamin C is incapable of exercising an essential influence on the human thyroid and thus holds no promise of an effective therapeutic application in exophthalmic goiter.

**Increase in Blood Sugar During Renal Diseases.**—Oefelein studied the significance of lesions of the renal parenchyma for the blood sugar content in patients without diabetes. He made dextrose tolerance tests on patients with nephrosclerosis and with glomerular nephritis and found that such tolerance tests produce considerable disturbances in the sugar metabolism in that the normal blood sugar level of the fasting stomach increases to a high level but also subsides again within a comparatively short time and that, in spite of considerable hyperglycemia, there is no glycosuria. These observations indicate that the kidney plays an important part in the regulation of the sugar metabolism. It is generally known that a normal sugar metabolism is produced by two organs: the pancreas, which produces the insulin, and the liver, which with the aid of insulin changes the dextrose to glycogen. The author points out that his studies make it appear likely that the kidney functions as a signal for the insulin secretion by the pancreas. He assumes that the intact glomerulus sends out an impulse that stimulates the insulin production. In case of severe lesions of the renal parenchyma, the kidney is incapable of signaling for the mobilization of the insulin at the right time, the reflex insulin elimination takes place too late, and a temporary hyperglycemia is the result. However, the stage of glycosuria is not reached because the pancreas functions properly and produces a sufficient amount of insulin to reduce the blood sugar to normal values in a comparatively short time. This assumed signal action of the kidney in insulin production also explains several other observations; for instance, the fact that a tolerance test with the same quantity produces usually the same type of blood sugar curve in the same person, while in different persons the same quantity produces different curves. This factor might be explained by the differing individual sensitivities of the renal parenchymas. Moreover, the temporary hyperglycemia that often appears in toxic and infectious processes might be explained in this manner, in that the intoxication impairs the sensitivity of the kidney as an indicator. However, the glycosuria in the absence of hyperglycemia, which also occasionally appears in renal disturbances, is not explained in this manner. The author suggests that this glycosuria is probably caused by the pathologic formation of glycogen in Henle's loops.

### Wiener klinische Wochenschrift, Vienna

49: 385-416 (March 27) 1936. Partial Index

- Ophthalmologic Aspects of Problem of Rheumatism. A. Pillat.—p. 385.
- \*Diagnostic Test for Hormone Disturbances of Male Sex Function and Its Clinical Application. E. Steinach, H. Kun and O. Peczenik.—p. 388.
- Epidemiology and Treatment of Diphtheria in Styria. O. Studeny.—p. 390.
- Foundations of Balneotherapy of Rheumatic Diseases. A. Strasser.—p. 394.
- Possibility of Photodynamic Action of Vitamin B<sub>2</sub>. M. Heiman.—p. 398.

**Hormone Disturbances of Male Sex Function.**—Steinach and his associates call attention to earlier laboratory tests which revealed that postpubertal castration of male rats results in a changed creatine metabolism, in that the animals lose the capacity to utilize the creatine they take in with the food and eliminate it largely unchanged in the urine. This result of castration is limited to the male sex. Moreover, the creatinuria always disappears following the injection of androgen but is increased by estrogen. Since eunuchoid rats likewise show an increased elimination of creatine, the authors conclude that the creatine test is an objective method for the determination of the endocrine function of the testes. They point out further that these experimental results corroborate and support the clinical observation that senile and eunuchoid men utilize only small amounts of administered creatine. They decided to devise a creatine test for detection of sexual disturbances caused by

hormone deficiencies. They determined the capacity to utilize creatine by means of a creatine tolerance test. At first they resorted to the intravenous injection of creatine, but later the test was simplified by letting the patients eat 150 Gm. of cheese (emmentaler) and dark meat and then determining the creatine content of the twenty-four hour urine. The authors give a tabular report of the results they obtained with this test and conclude that the creatine reaction represents an objective indicator of the endocrine function of the male gonad and that it makes possible the differentiation of the sexual disturbances caused by endocrine deficiencies from those of other origins. If a person with sexual insufficiency excretes more than 10 per cent of creatine in the urine, an incretory deficiency exists, whereas values below 10 per cent indicate other etiologic factors, such as psychic factors or disturbances in the sympathetic nervous system. The authors describe their therapeutic experiences with androsterone benzoate in sexual insufficiencies. They gave intragluteal injections of 5 mg. of the preparation four times each week and continued this treatment for at least four weeks or longer. The cases treated were chiefly those with deficient erection or complete loss of potency. The first normal erections frequently appeared after eight or ten injections but, in order to obtain a more lasting effect, further injections are necessary. The cases in which this treatment was employed included those in which the sexual insufficiency was of endocrine origin as well as some in which it was due to other causes. The results were favorable in about 75 per cent of the cases, including many in which the sexual disorder was of psychogenic origin or was due to disturbances in the sympathetic nervous system. In patients with ejaculation praecox without noticeable deficiency of erection the results were often negative and the authors conclude that endocrine treatment is not indicated for these cases. The treatment also effected improvements in the general condition of the patients comparable to those produced by vasoligation.

### Zeitschrift für klinische Medizin, Berlin

129: 499-636 (March 9) 1936. Partial Index

- \*Aminoacetic Acid Treatment in Progressive Muscular Dystrophy. W. Borst and W. Möbius.—p. 499.
- Autohemagglutination: Experimental Studies on Pathogenesis of the phenomenon; Case. F. Koeplin.—p. 512.
- Clinical Electrocardiography: Studies on Influence of Age on Type of Electrocardiogram of Healthy Persons. G. Schlomka and H. Krestmann.—p. 532.
- Id.: Behavior of Electrocardiogram in Patients with Hypertension. G. Schlomka and O. Theiss.—p. 552.
- Id.: Behavior of Electrocardiogram in Patients with Lesions of Cardiac Valves. G. Schlomka and E. L. Dietz.—p. 572.
- \*Involvement of Hypophysis in Development of Human Diabetes Mellitus: Action of Increased Elimination of Hormones of Fat and Carbohydrate Metabolisms on Saturated and Unsaturated Fatty Acids of Liver. G. Effkemann.—p. 585.
- \*Hyperergic Phenomena and Histamine. K. Gotsch.—p. 593.

**Aminoacetic Acid Treatment in Progressive Muscular Dystrophy.**—Borst and Möbius report four cases of typical progressive muscular dystrophy in which they resorted to the administration of aminoacetic acid. Only one of the four patients showed an improvement after prolonged treatment. The authors did not observe a decrease in the extracreatinuria that resulted from the aminoacetic acid administration; that is, there was no indication that the disordered muscular metabolism was normalized by administration of aminoacetic acid. They point out that besides creatinine there are apparently other substances of an unknown nature which play a part in Jaffé's reaction. The administration of aminoacetic acid to normal persons did not reveal a modification of the creatine-creatinine metabolism. The authors think that the different results obtained with aminoacetic acid by various investigators might be due to the fact that progressive muscular dystrophy is not always of the same nature and that perhaps periods of arrest may occur in the course of the disease, during which the metabolism of the remaining musculature shows normal behavior.

**Involvement of Hypophysis in Diabetes Mellitus.**—Effkemann points out that Anselmino and Hoffmann, in their studies on the hypophyseal regulatory mechanism in human diabetes mellitus, observed an increased elimination of the anterior hypophyseal hormones of fat and of carbohydrate metabolism



in the urine of diabetic patients as well as increased quantities of these substances in their serum. Thus it seemed likely that the excessive production of these hormones plays a part in the pathogenesis of diabetes mellitus. Increased ketogenesis and deficient glycogen fixation in the liver of diabetic patients seem to find a new explanation in the increased presence of the hormones of fat and of carbohydrate metabolism. The author states that it was proved in former studies that these two hormones produce changes in the saturated and unsaturated fatty acids of the liver. It was the aim of these investigations to study in their effect on the fatty acids of the liver the substances that Anselmino and Hoffmann detected in the serum and urine of diabetic patients and identified as the hormones of fat and of carbohydrate metabolism. First the author investigated the effect of the injection of the serum of diabetic patients on the hepatic fatty acids of young roosters and found that the unsaturated fatty acids as well as the total amount of fatty acids increase. He found that the ultrafiltrates of the alcoholic precipitates of diabetic urines, which have a  $pH$  of 9.17, produce in rats an increase in the unsaturated fatty acids and in the total amount of fatty acids. Ultrafiltrates of a  $pH$  of 5.42 produce a reduction in the saturated and unsaturated fatty acids. The author concludes that these studies furnish a new proof for the increased occurrence of the hypophyseal hormones of fat and of carbohydrate metabolism in the blood and urine of patients with diabetes mellitus.

**Hyperergic Phenomena and Histamine.**—Gotsch employs the term hyperergic as equivalent to allergic in the sense of a hypersensitivity. He points out that recent studies indicate that the antigen-antibody reaction of the allergic organism is caused by a toxin. The great similarity of hyperergic manifestations, especially of anaphylaxis, with the shock produced by the injection of histamine leads to the assumption that the toxin is a histamine-like substance or actually histamine. After citing studies that proved the presence of a toxin of histamine nature in the anaphylactic shock of dogs and guinea-pigs, the author reports his own studies on eighty-two persons without signs of an allergic disturbance and on forty-five allergic patients. He tested their reactivity to a weak galvanic current and to histamine. Summarizing, he states that there is no definite relationship between an allergic reaction and the skin reaction to the electrical irritation, for in patients with allergy such a reaction was often absent, while it was occasionally present in persons without allergy. However, the majority of allergic patients (forty out of forty-five) manifested a hypersensitivity to insulin. Nevertheless, histamine hypersensitivity is not necessarily a sign of an allergic condition, for it occurs also in persons without allergy, although it is most frequent in persons with hyperirritability of the vascular nervous system. The author points out that, in view of the fact that histamine plays a part in the majority of methods which have been recommended for nonspecific desensitization, it seems justified to try histamine in the treatment of allergic patients. He did this by administering histamine transcutaneously by means of a galvanic current of 8 milliamperes. The cathode was dipped in water and the anode in a freshly prepared histamine solution of 1:20,000 and applied to the chest or forearms. The first application lasted only five seconds, so as to avoid undesirable secondary effects. The duration and number of the later applications depended on the cutaneous reactions. In the course of the first two or three weeks the treatments were given daily as a rule, and in the following two or three weeks they were given two or three times weekly. This mode of treatment was employed in thirty-five allergic patients (thirty with bronchial asthma, two with migraine, one with hay fever and two with mucous colitis). Of the patients with asthma, five were completely cured and sixteen were greatly improved, while in the remaining nine the treatment proved ineffective. The patients with migraine were freed from their complaints, but the patients with hay fever and colitis showed no improvement. The improvement in the successfully treated patients lasted generally from three to four months, but in three cases it lasted more than a year. The author thinks that histamine therapy could be resorted to not only in cases in which a specific desensitization is impossible (sensitivity against many antigens) but also as an adjuvant to specific desensitization.

## Zentralblatt für Gynäkologie, Leipzig

60: 673-720 (March 21) 1936

Pigment in Mucous Membrane of Cervix Uteri. H. Hinselmann.—p. 673.

\*Clinical Aspects of Dysgerminoma. E. Fauvet.—p. 675.

\*Question of Transperitoneal Passage of Ovum from One Side to the Other. F. Posatti.—p. 686.

\*Determination of Sex According to Birthdays of Children and Without Sex Chromosome. O. Schöner.—p. 689.

Biologic Foundations of Periodic Fertility and Sterility of Women. E. Glaser and O. Haempel.—p. 702.

Further Studies on Mechanism of Development of Physiologic Genital Milieu. L. von Dobszay.—p. 707.

**Clinical Aspects of Dysgerminoma.**—Fauvet stresses the main aspects of dysgerminomas: their special position among the tumors of the ovaries and their appearance particularly in young or sexually deficient women and in true or pseudo hermaphrodites. Nevertheless, it has been found that they may appear also in older women and that they do not necessarily impair the reproductive capacity. Moreover, the formerly emphasized clinical symptomatology may fail in the diagnosis and, since dysgerminomas do not produce hormone manifestations like granulosa cell tumors and arrhenoblastomas, other characteristics must be searched for. This is important, not only because dysgerminomas are not as rare as might be assumed, in that they amount to about 3 per cent of the malignant ovarian tumors, but also because their prognosis is not at all unfavorable if they are removed early. The author describes three cases of dysgerminoma which he observed in a comparatively short time. He gives especial attention to the factors that are of value in determining the prognosis. He thinks that from the anatomic point of view tumors rich in cellular elements with negligible supporting tissues have an unfavorable prognosis. These diffuse growing tumors apparently have a tendency to infiltrate the surrounding tissues. However, if the epithelial nests are scarce in a richly developed connective tissue, the prognosis is not necessarily favorable. If hypophyseal hormones appear in the urine, it may be assumed that the tumor has a considerable proliferating tendency, although the tumor is not the source of the hormone. The appearance of the luteinizing factor indicates an unfavorable prognosis. The author also made elastometrical studies on dysgerminomas and found that the solid tumors cannot be designated as hard but rather as of an elastic consistency.

**Transperitoneal Migration of Ovum.**—After pointing out that animal experiments permit no definite conclusions regarding the possibility of transperitoneal or external migration of the ovum in human subjects, Posatti calls attention to the fact that the two tubal funnels are close together and that there is a possibility that the attraction fields of the two tubes, that is, the areas covered by the vortex current of the cilia and the suction of the peristaltic movements, not only border on each other but may even overlap. In view of this fact, it is possible that an ovum from one field reaches the other one. Moreover, there are cases in which conditions exist that prove an external (transperitoneal) migration of the ovum. In this connection the author cites (1) the existence of a pregnancy when the tube is missing on one side and the ovary on the other (such a combination is rare, but a case of this nature has been described by Rokitansky), (2) the existence of a tubal pregnancy in which the corpus luteum is on the other side, and (3) the existence of a pregnancy in a rudimentary accessory horn, if the ovary of the same side has no corpus luteum or is itself absent. To be sure, in this case, as in the event of a tubal pregnancy, the possibility of internal or uterine migration must be ruled out. However, since there exists only rarely a communication between the accessory and the normal horn, internal migration is practically out of the question. In order to gain more insight into the problem of external migration, the author made careful observations in the course of 214 tubal pregnancies that came up for operation in the last ten years. In the forty-five cases in which the ovary had to be removed, the corpus luteum was searched for and was found in twenty-five. However, in twenty cases it could not be found and the author assumes that in these cases it was on the opposite side. Even in some of the cases in which the ovary was not extirpated, the surgical report states that the corpus luteum was on the other side. The author reaches the conclusion that the development of tubal pregnancy may have some connection with



external or transperitoneal migration of the ovum, assuming that owing to the retardation caused by peritoneal migration the ovum is ready for nidation at the time of passage through the tube, and thus a tubal pregnancy results. However, definite conclusions will be possible only after more information has become available regarding the incidence of the transperitoneal migration of the ovum.

**Determination of Sex According to Birthdays of Children.**—Schöner directs attention to his earlier reports on the determination of the sex of offspring from the dates of birth, but he admits that his earlier studies were made on the basis of ovulation cycles of twenty-eight days. In this report he concerns himself with cycles of shorter and longer duration. He thinks that the fact that he is able to determine the sex of the children of a family on the basis of the sex of the first child, of the length of the ovulation cycle and of the birthdays, proves the following points: 1. The ova have their sex character before fertilization, and sex is consequently not determined by a sex chromosome. 2. The succession of the sexes is 2:1 in each ovary, the male sex predominating in the right ovary, the female sex in the left ovary. 3. Under ordinary conditions, the function of the ovaries alternates. He points out that he has been able to determine correctly the sex succession of the children in thirty-two families with from six to twelve children. In four of the mothers the ovulation cycle was 25.92 days, in four 27.32 days and in four 28 days, while in others it was 29.12 or 30.84 days. In a few cases two different ovulation cycles could be used. Of a total number of 218 children, 108 (eighty-two boys and twenty-six girls) originated in the right ovary, while 110 (sixty-six girls and forty-four boys) originated in the left ovary. This proves again that the right ovary produces more boys and the left more girls.

### Hospitaltidende, Copenhagen

79:169-196 (Feb. 18) 1936

\*Etiology of Postvaccinal Encephalitis (in Part Illuminated by Bacteriologic Examination on Necropsy of Case). L. Heerup.—p. 169.

**Etiology of Postvaccinal Encephalitis.**—Heerup says that twelve days after vaccination of two sisters, aged 4 and 7, fever, headache, drowsiness and stiffness of the neck and back set in, with redness of the fauces and swelling of the neck glands. The younger child was discharged as well twelve days after the injection of poliomyelitis serum and smallpox convalescent serum. The older sister, in spite of the injection of poliomyelitis and vaccine serum, became hyperpyretic and somnolent and died two and a half days after the onset of the first symptom. Histologic examination revealed a pronounced infection hyperplasia of spleen, thymus, lymph nodes and liver, especially in the reticulo-endothelial system, with hemorrhages and necroses in the spleen and marked diffuse encephalitis in the brain and medulla oblongata, of the usual type in post-vaccinal encephalitis. Bacteriologic examination of specimens from the organs proper showed a massive diffuse infection with *Staphylococcus pyogenes-aureus* in tonsils and lungs; the other organs were sterile. In the disorder in young children termed by him fulminant tonsillopulmonary toxemia, the author has demonstrated that toxins from infections in the tonsils and lungs, similar to that in this case, can cause rapid, fatal toxemia, and he cites five cases of acute encephalitis in children (Gretha Muhl) which correspond to his toxemia cases. He states that, after vaccination, vaccine virus can for a time regularly be established in the blood and organs; he discusses the possibility that toxins can produce encephalitis when vaccine virus has perhaps affected the reticulo-endothelial system, and he summarizes as follows: An apparently well child is vaccinated. A staphylococcal infection occurs in the tonsils and respiratory passages, or a similar infection hitherto held in check by the reticulo-endothelial system flares up when the latter is affected by the virus. The bacterial toxins cannot be sufficiently bound by the damaged reticulo-endothelial system and cause organic degenerations, toxic hemorrhage and a hematogenic perivascular encephalitis. Possibly the reticulo-endothelial system has previously been taxed by subclinical staphylococcal infections and is therefore more easily blocked by the vaccine virus, or these infections have caused an allergic condition, which explains the violent intensity of the tonsillopulmonary infection without more marked local reaction. Occurrence in different countries at certain seasons might depend on epidemic

incidence of infections often subclinical, and the constant incubation time for postvaccinal encephalitis may be explained by assuming that the toxemia does not produce changes in the brain until the function of the reticulo-endothelial system is fully blocked, that is, at the height of the vaccine infection, after ten or twelve days. The effect of the convalescent serum may depend on an unblocking of the reticulo-endothelial system by neutralization of the vaccine virus. In postinfectious or parainfectious encephalitis the infection, instead of the vaccine virus, causes the function blockade. The author hopes that by application of his bacteriologic technic in postmortem examinations other investigators may be able to confirm or refute his theory.

### Norsk Magazin for Lægevidenskapen, Oslo

97:217-328 (March) 1936

Fundamental Important Results of Study of Constitution and Pathology of Constitution. Nagelli.—p. 217.

Experimental Contribution to Explanation of Relation of Corpus Luteum Extract to Estrogen. A. P. Jacobsen.—p. 224.

Traumatic Lipodystrophy: Contribution to Clinic and Pathogenesis of Lipodystrophy. G. H. Monrad-Krohn and R. Forsberg.—p. 249.

\*Progressive Hereditary Cerebral Leukodystrophy (Merzbacher-Pelizaeus Disease): Four Cases. R. Forsberg and R. Strømme.—p. 261.

\*Increase in Reticulocytes After Injection of "Anemic" Serum. E. Hjort.—p. 270.

Treatment of Fractures with Cuendet's Extension Apparatus. W. Otnes.—p. 278.

\*Are "Duret Hemorrhages" Diapedesis Hemorrhages and Do They Possibly Require Long Time for Development? O. Berner.—p. 284.

Murder-Suicide. O. Berner.—p. 289.

**Progressive Hereditary Cerebral Leukodystrophy.**—In Forsberg and Strømme's four patients, a brother aged 13 and three sisters aged 7, 5 and 4, spastic phenomena, most prominent in the lower extremities, ataxia of cerebellar type and more or less marked psychic defects were common. A cousin of the maternal grandmother was "queer"; an older sister of the children has spontaneous nystagmus and rigidity of the lower extremities; one cousin has strabismus and another an unsteady gait. Differences in the clinical picture in the cases are attributed to different stages of development. The picture is at present dominated by progressive dementia, increasing rigidity, ataxia and gradually increasing involuntary movements. Different stages of the disturbance cannot be sharply distinguished. The authors' conclusion that this syndrome, because of numerous and essential points of clinical similarity, belongs to the form of heredodegenerative disorders of the brain described by Merzbacher-Pelizaeus is supported by the undoubted heredity, start in earliest childhood and chronic course. As far as they know, the disorder has not before been described in four siblings. In spasticity, ataxia, intension tremor and nystagmus there is a marked resemblance to multiple sclerosis, but the remissions that characterize multiple sclerosis have not been observed.

**Increase in Reticulocytes After Injection of "Anemic" Serum.**—Hjort says that intravenous injections in normal rabbits of serum from rabbits with recent massive hemorrhages produced an increase in the percentage of reticulocytes in one third of the cases, the rise and course resembling those after massive loss of blood. In the remaining two thirds of the cases there was either a slight increase or a slight decrease in the number of reticulocytes. "Anemic" serum from the same donor injected into two different recipients caused a noticeable rise in the reticulocyte count in one and a decrease in the other. The marked increase in reticulocytes in one third of the cases was not accompanied by a corresponding increase in the total number of red corpuscles.

**Are "Duret Hemorrhages" Diapedesis Hemorrhages?**—A woman, aged 58, was struck by a bus and immediately taken to a hospital under the diagnosis of concussion of the brain, but she died before arrival. Berner found macroscopically clear and typical Duret hemorrhages in the fourth ventricle. He states that the patient had lived at the most fifteen minutes after the accident and that his picture demonstrates that diapedesis hemorrhages can become visible to the naked eye in that time, and, further, that without a lesion of the head, fracture of the skull or injury of the brain itself, as in this instance, the hemorrhage in the fourth ventricle cannot be explained as a rhexis bleeding. He avers that the hemorrhages, by Duret believed always to be rhexis hemorrhages, are predominantly, if not always, diapedesis hemorrhages.

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## INFLUENCE OF THE DEPRESSION ON THE NUTRITION OF THE AMERICAN PEOPLE

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The present-day depression is having a profound influence on the lives of the American people. Which of two groups of factors, the emotional or the material, is most potent it is difficult to say. Unquestionably the former has had a far reaching effect, for disappointment, the destruction of hopes and ambitions, the humiliation that comes with failure, and loss of morale, each has had its influence, sometimes a devastating one. It should not be forgotten, however, that the reverse of this has occasionally obtained and the picture been lightened by the improvement in health and spirits that comes from a simpler diet and slower tempo of life. But what of the material side? What have been the effects of the depression, if any, on the nutritive state of the American people? Have they suffered in this respect, and to what degree?

It seems hardly necessary to point out first of all that the food habits of a person are not determined solely, or even necessarily in large part, by availability of supply. Habit, custom, education and native intelligence all are factors that count. It should be recognized, too, that this question cannot be answered by reference to conditions observed in foreign lands; for in America food is plentiful and relatively cheap, and the hardships of poverty seldom reach the depths encountered in other countries. Our problem is one peculiar to ourselves. To be reckoned with also is the fact that the United States government has been extremely liberal in its appropriations for relief and that social agencies, on the whole, have shown an intelligent understanding of human needs and great zeal in meeting the emergency. Until today I have felt that nutritive failure in America is largely the result of ignorance and faddism. Has there been added to these two factors the further influence of poverty? To answer this question has been the object of this inquiry.

There is no single criterion, universally applicable, by which a person's nutritive state can be judged. Weight, color, endurance, poise and sense of well being all give evidence, but, excepting weight, each of these qualities is difficult to measure in a large scale investigation. For the present inquiry, therefore, especially as it applies to children, it would appear that, in the absence of edema, body weight is the most widely applicable criterion. The discussion that follows will

be concerned largely with four pieces of evidence: (a) the weight and the increment of gain among school children as recorded before and during the depression, (b) the weights of the employed and unemployed among working men, together with estimates of fitness, (c) the testimony of welfare agencies, and (d) the clinical observations of a selected group of physicians.

### NUTRITION IN CHILDREN

Since the effects of nutritive deprivation are felt most heavily by children, it is among these that one expects to find the most graphic evidences of food shortage. To recognize the truth of this one has but to recall the plight of the children of the central empires during the World War. It is interesting, too, to note that these effects are still being felt, for as evidence that an inadequate diet during the earlier years may produce a lasting effect on the child's stamina it is reported that among a large group of Berlin school children progress in school was not as good among those born during the years when the food shortage was greatest (1917-1919) as among those born in years of less hardship.<sup>1</sup> Even today in Austria the economic crisis is felt most profoundly by the children, as was indicated in the recent statement of Gottlieb and Stransky<sup>2</sup> that, among 800 school children studied by them, those of the unemployed showed an especially large number to be underweight.

Conditions more nearly comparable to our own, however, can be looked for in the other English speaking countries. In England the picture is definitely brighter than on the continent, as was shown by the statement of the minister of health in the house of commons in 1933 that unemployment had exercised no unfavorable effects on the nutrition of the workers and that there was a remarkable decrease in the death rate of children. This achievement he credited to the country's health services.<sup>3</sup> Coming closer home, still more encouraging conditions are to be found in Canada. Tisdall,<sup>4</sup> writing from the subdepartment of pediatrics of the University of Toronto, states that the impression he has gained from the 86,000 attendances on the outpatient department of the Hospital for Sick Children is that the patients are just as well fed, if not better, than before the extensive relief now in force was started. Miss Redmon, director of nutritional teaching of the Toronto department of health, believes that the middle class, whose salaries have been rigidly cut, are suffering from lack of proper food; but Tisdall, while questioning the adequacy of relief diets for older children, believes on the whole that the indigent children of Toronto are

1. Economic Distress and the Health of School Children, Berlin letter, J. A. M. A. 98:1671 (May 7) 1932.

2. Effects of Economic Crisis on Children, Berlin letter, J. A. M. A. 99:1523 (Oct. 29) 1932.

3. Unemployment Has No Unfavorable Effect on Nutrition of Workers, London letter, J. A. M. A. 101:940 (Sept. 16) 1933.

4. Tisdall, F. F. Personal communication to the author.

better fed now than ever before. Hutton,<sup>5</sup> medical officer of health of the city of Brantford, Ont., reports that the number of underweight school children has fallen from 8 per cent in 1925 to 5 per cent in 1935, and states that it is his impression that there are less nutritional disorders in that city than in normal times. The available evidence, then, would indicate that the nutritive state of the Canadian child has not suffered.

Turning to the United States, there are a number of reports of carefully conducted surveys that tell of the effects of the depression on the nutritive state of the American child. The observations of Kiser and Stix<sup>6</sup> on 540 children of New York's lower east side, and the data collected by Eliot and Burritt<sup>7</sup> of the Children's Bureau from a number of large American cities, suggest to each of these investigators that there is a recognizable increase of malnutrition among children. Diametrically opposed to these views, however, are the conclusions of Palmer,<sup>8</sup> consultant in child hygiene to the United States Public Health Service. This physician in his studies of the growth and weight of 2,500 school children of Hagerstown, Md., with special reference to the years of the economic depression, found that "averages of weight of children from 6 to 11 years of age did not differ significantly in 1933 from similar averages based on weights recorded during 1921 through 1927." He observed that the variability in weight was substantially the same in 1933 as in the earlier period, with a probable exception in the group of younger girls, who showed a slight increase in the proportion of underweight. It is interesting to note that in subsequent studies<sup>9</sup> it was found that the children of those families which changed from a relatively comfortable to a poor economic state, the "depression poor," so called, were the ones most often affected. In his investigation of differences in the weight of children from the various economic classes Palmer found that, in spite of the marked economic changes that have recently occurred, approximately the same class differences exist today as were observed in normal times. These extensive studies can be summarized by the statement of this investigator that "the recent economic depression has not materially affected the growth in weight of a representative sample of school children."

A critical review of the studies of Palmer and others was offered by Eliot,<sup>10</sup> who drew conclusions somewhat at variance with those stated. She expressed concern regarding the present and future growth and development of the five or more millions of children affected by the depression and believes that the depression is having an adverse effect on the health and nutrition of many of these children.

From San Francisco comes a report of the studies of Geiger,<sup>11</sup> which differed from Palmer's studies in that they were confined solely to children on relief. Taking 10 per cent or more deviation from the normal as a criterion of underweight, this investigator found that among 4,500 such children 11 per cent of the

school group and 5 per cent of the preschool group were underweight, which figures compare favorably with the control group of children not on relief, who showed 13 per cent and 8 per cent of underweight respectively. Geiger states that even a conservative interpretation of these observations leads one to the conclusion that the nutritional status of children who have been on commissary relief compare very favorably with a normal or even a more privileged group in the community.

In an effort to secure information from a still larger group of children, I have examined the height and weight records made in 1927 and in 1934 of approximately 20,000 pupils (19,891) of the Birmingham public schools, representing essentially 25 per cent of the total enrolment for the two years. This is an industrial city the population of which has profoundly felt the effects of the depression, and in selecting the school from which these figures were taken I have chosen those lying in industrial areas. The figures were taken from the regular health cards that record height and weight measurements made in a routine manner twice yearly and for the two periods represent identical age groups. The weights include clothing. The results of this study may be briefly summarized as follows:

As to heights, white schools showed that the median heights ranged from  $\frac{7}{10}$  inch to  $2\frac{1}{10}$  inches (0.5 to 5.1 cm.) more in 1934 than in 1927, an average gain for the depression period of  $\frac{7}{10}$  inch (1.8 cm.).

Negro schools showed that the median heights in 1934 ranged from  $\frac{7}{10}$  inch (2.28 cm.) below to  $1\frac{1}{10}$  inches (2.6 cm.) above the medians in 1927, or an average for the depression period of  $\frac{1}{10}$  inch (0.25 cm.) less.

As to weight, white schools showed that the median weights were the same to 1 pound (450 Gm.) greater in 1934 than in 1927, an average for the depression period of  $\frac{2}{10}$  pound (90 Gm.) greater.

Negro schools showed that the median weights in 1934 ranged from  $\frac{9}{10}$  pound (360 Gm.) below to  $\frac{1}{10}$  pound (180 Gm.) above the medians in 1927, an average for the depression period of  $\frac{2}{10}$  pound (90 Gm.) less.

To explain why the median height of the white child was  $\frac{7}{10}$  inch greater and that of the Negro child  $\frac{1}{10}$  inch less following the depression than in an earlier period requires conjecture which finds no place in this report. The difference in median weights was so little as to require no comment, being for the two periods  $\frac{2}{10}$  pound greater in the white schools and  $\frac{2}{10}$  pound less in the Negro schools. As between the two races, when one considers the differences in economic status and particularly the very marked differences in degree of enlightenment, I think that one can be satisfied that the less favored race has been well taken care of. On the whole I believe that these figures warrant the assumption that during the depression the children in an important industrial area of a large American city have not suffered in the state of their nutrition.

#### NUTRITION OF WORKMEN

The extent to which the nutritive state of the American working man has suffered during the depression is not so easy to determine. The medical director of one of the largest industrial plants in the East writes that while he has no definite figures bearing on this question he recalls having seen a number of cases of nutritional disturbance. He comments on an increased tendency toward accidents in some of those employees who have been off for appreciable periods of time,

5. Hutton, W. L.: Personal communication to the author.  
6. Kiser, C. V., and Stix, R. K.: Nutrition and the Depression, Bull. Milbank Memorial Fund Quarterly 11: 299, 1933.

7. Eliot, Martha M., and Burritt, Bailey B.: Some Effects of the Depression on the Nutrition of Children. Child Welfare, News Summary, Children's Bureau, U. S. Dept. of Labor, Washington, D. C., July 17, 1933.

8. Palmer, C. E.: Further Studies on Growth and the Economic Depression, Pub. Health Rep. 49: 1453 (Dec. 7) 1934.

9. Palmer, C. E.: Height and Weight of Children of the Depression Poor, Pub. Health Rep. 50: 1106 (Aug. 16) 1935.

10. Eliot, Martha M.: Child Health—1933-1934; Critical Review, J. Pediat. 4: 817 (June) 1934.

11. Geiger, J. C., and Barrett, P. S.: A Nutritional Survey of Forty-Five Hundred Children on Relief, Am. J. Pub. Health 25: 183 (Feb.) 1935.

which he is inclined to attribute to mental lethargy. Whether this mental lethargy is due to poor nutrition or to other causes is a matter for conjecture, but it is interesting that the medical director of one of the Southern plants has noted the same thing, which he ascribes to the obvious fact that the men first laid off were those who were least efficient and of a lower order of native intelligence.

A physician responsible for the health of the employees and their families of one of the largest industrial plants in the South tells me that those employees of his company who have been idle, and therefore on relief, show no more evidence of nutritive failure or lack of efficiency than is seen among the men who have had steady employment, but he reminds me that his company has maintained the same watchful interest over the families of the men who have been laid off as is shown to those who are kept on the rolls and that the public relief given the former group has been materially supplemented from the company stores.

For the present investigation, therefore, another plant was selected in which such supplementary relief measures were not applied. The weight in relation to the height of the men who recently applied to this company for employment, and who therefore were assumed to have been idle for varying lengths of time, were compared with similar data obtained from those who have had steady employment. Eight hundred and thirty-nine men, all of them stripped, were weighed on the same pair of balanced springless scales. Weights were compared with the normal for height and age, and each man's "percentage of normal weight" was determined. Because these men were weighed without clothing, the scale adopted was 5 per cent lower than the Metropolitan Life Insurance Company's table for men with clothing. The men were divided into two groups: "old" employees, who had worked for the company more than three months, and "new men," who had worked less than three months. In the latter group were included also those men who were examined for employment but were declined. A small number of the "new men" had come directly from some other job, but most of these had worked only sporadically on a part time basis; many of this group were on relief. There was no noteworthy difference in the weights of these two groups. It is recognized that this investigation of working men leaves much to be desired and that far-reaching conclusions are not warranted; but it is believed that these figures suggest that the nutrition of the men out of work, many of whom were on relief, was not recognizably inferior to that of the men who have enjoyed continuous employment.

#### THE SOCIAL ASPECT

Turning to another aspect of this question, social workers and those in charge of relief and other health agencies have provided a number of reports; but because the worker has as a rule focused his vision sharply on those people most in need of help, a group which cannot be regarded as a fair sample of the population, such reports are not always suited to the present purpose. An excellent view of this aspect of the picture is given by Eliot in her critical review, to which reference has just been made. She sees the more sober tones and believes that the effect on children of inadequate food, too little medical care and lack of security is becoming more and more apparent. Miss Raymond, director of the department of public welfare of New Orleans, states that almost all those who apply for relief, or at least the majority, are undernourished.

She comments, however, on the fact that the regular relief furnished families throughout the state resulted in marked improvement in health conditions among these families to such an extent that in their local communities the appearance of such families was the subject of frequent comment. Miss Wisner, director of the school of social work of Tulane University, expressed the belief: "First, that in the city of New Orleans, where the cost of living is higher and the relief budget relatively less adequate, there has been widespread malnutrition as a result of the depression; second, that in the rural areas, where the relief budget has not in all cases been adequate but where it has been accompanied by such supplementary services as the nutritional program and the medical program of the E. R. A., health conditions in the families have been as good and even better, in some cases, than formerly." Referring to the educational effect of these measures on the tenant farmers and share croppers of Louisiana, who formerly lived wholly on a diet of meat, meal and molasses, she writes: "several of the parish workers report that, as a result of the nutritional program, some of the [plantation] commissaries have had to stock themselves with a wider variety of food products as a result of changing food habits of the people."

Many case histories included in the reports of welfare agencies tell of instances of great destitution and of pitiable suffering. As in all other countries, destitution has always been a part of the picture of American social life and perhaps today stands out more prominently than ever before, but to what extent it colors the entire painting it is difficult to say. My observations incline me to believe, under the fortunate circumstances in which we find ourselves in America, that it occupies a relatively inconspicuous corner of the picture.

#### THE MEDICAL ASPECT

The most revealing testimony that I have to offer comes from a selected group of twenty-five observant physicians interested in nutrition who live in different parts of the United States. Their replies, an abstract of which I quote, impress me as showing a significant agreement of opinion.

From New York, Du Bois writes that prior to 1932 in his service at the Bellevue Hospital he gathered the impression that the poor people were showing the effects of the depression and that there was an increasing number of patients with the milder forms of dietary deficiency. He saw few cases of scurvy and none of frank beriberi, but there was an occasional case of nutritional edema. In subsequent years at the New York Hospital he has seen a few cases of pellagra, of scurvy and of nutritional edema but does not think that the number of these is disproportionately large. In watching the people on the streets of New York during the past three years Du Bois has been rather struck with the absence of beggars, tramps and other manifestations of poverty. Spencer, drawing on his more recent experience in the same service at Bellevue Hospital, states that during the earlier days of the depression he had a definite feeling that there was a marked increase in deficiency states but that more recently he has observed in the population of that hospital evidences of better nutritional care. He adds: "While I believe there was, and possibly still is, an increase [in nutritive failure] compared with the predepression situation, I feel also that many of us were letting sub-clinical deficiency states slip by unnoticed; hence I do not feel like being too dogmatic about the relationship of the depression to the incidence of malnutrition."

Harlow Brooks wrote that because of better organization of the relief agencies there is not much increase in malnutrition in New York today. Crohn states that the people "all look well nourished" but emphasizes the far reaching effects of psychic and emotional factors in the production of functional disorders.

Christian, writing from Boston, states that for the first time he has seen in the wards of the Brigham Hospital people in actual partial starvation, and he calls attention to the fact that the physician's therapy is sometimes handicapped by the inability of the patient to buy the right food. Fitz states that only rarely has he seen people who have suffered from lack of food as a result of the depression and that most of the people, including middle class and indigent people, have continued to hold their weight level at rather too high than too low a figure. He emphasizes the influence of self-induced abnormal diets rather than lack of food in the production of pellagra and other deficiency states. Soma Weiss made an analysis of all the records of the Boston City Hospital bearing on this subject, from which he concluded that, while deficiency diseases are not uncommon in New England, such diseases are seldom due to lack of money but rather to other causes. He has the impression that in view of prevailing relief measures, food deficiencies are no less common than formerly. An interesting report comes from Root of the same city, who tells of a group of boys in a crowded tenement district whom he has examined systematically from time to time during the past fifteen years, and of his more recent studies of these boys. He writes: "The families were all poor, some of them very low in intelligence, but they were under the influence of a settlement house and therefore had the benefit of their friendly interest. To my great surprise, these boys had grown in height and weight as a group just about according to the average for that age period, namely, 10 to 16 years, in spite of the very dreadful effect of the depression on the community life of that neighborhood."

From Philadelphia comes the somewhat different report of Piersol, who believes that as the result of the depression he has seen in the wards and outpatient departments a greater number of individuals suffering from undernutrition than he did formerly. He has seen no cases of scurvy or nutritional edema. On the other hand, Rehfuss has gained the impression that, while anxiety incident to financial loss has caused an increase in the incidence of peptic ulcer, a definite improvement in other diseases, notably certain cases of mild arthritis and gallbladder disease, has been brought about by the simpler life and a more restricted diet. In Baltimore, Lay Martin has observed no effect of the present-day depression on the nutritive state of the people; he quotes the heads of other medical clinics as having seen no results that they could interpret as an effect of lowered nutrition due to the depression.

In the West, Spies, writing of his search for nutritional diseases at Lakeside Hospital in Cleveland, states that although loss of weight and other evidences of malnutrition due to lack of food are occasionally observed in the indigent groups, it is his impression that the number of such cases has increased but little, if at all. The malnutrition that he has seen in the middle and well-to-do classes he has been able to trace, as a rule, to alcoholism or food faddism. He has seen no increase in the incidence of pellagra, and although he has been on the lookout for scurvy he has found only one such case. Haden, in writing of the more favored economic class, states: "We have seen many

cases of nutritional deficiency disease here because we have been interested in it and on the lookout for it, but I think the economic status of these patients has had relatively little to do with the development of this deficiency disease." John of the same city has seen no appreciable change in the nutritive state of his patients. In Chicago, Barborka has been more impressed by the inadequacy of the diets, especially as regards protein and by faulty food habits of the people than by actual nutritive deprivation. Soper of St. Louis has been more deeply impressed by the anxiety neuroses displayed by his patients than by the effects of inadequate food.

At the Mayo Clinic, Alvarez states that he has not been able to detect any increase in malnutrition, and Eusterman writes that he does not think that they have seen very much malnutrition or many frank or sub-clinical types of dietetic deficiency during the depression; he believes that in some respects the nutritional status of the kind of patient seen at that clinic has improved. The observations of Geiger in San Francisco have already been discussed. Bloomfield from the same city writes: "I have seen no notable impairment of nutrition that could be attributed to the depression. Such nutritional disorders as we have seen have come largely as a result of restriction of diet through quackery or disease, and not because of inability to get food."

In the South, where nutritional failure is believed to affect a disproportionately large part of the population. Musser writes from New Orleans that, while faulty dietary customs in certain regions of Louisiana have always sent to the Charity Hospital a few cases of beriberi, pellagra and other nutritional diseases, he has seen during the depression no increase in the incidence of these diseases. Turner, from the same clinic, states that his only observation in this respect is that in the last two years there has been a sharp diminution in the number of pellagrins. Paullin of Atlanta, from his wards in the Grady Hospital, writes that he has seen fewer cases of deficiency disease than he did before the depression, that there has been a steady decrease in the incidence of pellagra and that the only cases of malnutrition he has seen were directly traceable to disease and not to lack of food. This expresses very well my experience and that of my colleagues in Birmingham. There was a peak in the pellagra admissions to the Hillman Hospital in 1929 and again in 1932, but since then this disease has been on the decrease. In the adult wards we have recognized no scurvy or beriberi. The general nutritive state of the patients coming to the wards of the hospital and to the outpatient department appears to be fully as good as that observed in years past. This applies also to the people whom I see on the streets. From Duke University in North Carolina, Hanes reports an increase in the number of cases of sprue, but he is inclined to attribute this to the live interest in this disease which in recent years has developed at that clinic. From Vanderbilt University, Youmans, whose studies of nutritional edema in Tennessee are well known, writes that the vast majority of patients seen in that clinic appear to be a little better nourished today than formerly. He feels that this is due to the fact that with the introduction of general relief many of these people have a somewhat better dietary than before, and that through education and necessity a change for the better in their dietary has been forced on them. Even among the "depression poor" he has seen relatively little malnutrition. He has seen no increase in outspoken scurvy and an actual

decrease in the incidence of pellagra. He adds that he is today seeing only a few cases of frank starvation, while prior to 1930 such cases were relatively numerous.

The physicians who have been quoted express opinions that approach unanimity. With only an occasional exception the answer has been that the physician sees today no more nutritive failure among his patients, whether indigent or more fortunate, than he saw in years past, and that by and large the present-day depression has had no recognizable effect on the nutritive state of the American people.

#### COMMENT

It is significant that this investigation has revealed no evidence of undernutrition in the American school child. To explain this there are perhaps many reasons, prominent among which are, first, that the parent who feels the pinch of necessity is now giving greater thought than ever before to the welfare of his child; second, that in the past five years the lunch rooms of public schools have undergone rapid development, and, third, that welfare agencies have been keenly alive to the hazards confronting the American child and have been highly efficient in meeting them.

Above all else one thing seems to me to be clearly revealed by these studies; that is, the value of enlightenment in nutrition. The American people during the past five years have suffered great material losses; a large part of them have been forced to economize in a most rigid manner, and another group have had no means with which to buy the necessities of life. The last have been forced to depend on government subsidies. Yet there is no clear evidence that the nutritive state of any appreciable number of people is inferior to that of predepression days. Most striking is the fact that the very people among whom one expects to find extensive undernutrition are on the whole in good condition and in many instances in better nutritive state than in an earlier period. What is the explanation? Education. While there are notable exceptions, the persons who drop first to the bottom of the economic scale are those who show the least efficiency in making progress in the world, in which lack of efficiency is included the choice of food. Most of them have always been guilty of dietary faults, and many were living on the verge of starvation. Then came the depression and the reorganization of the welfare agencies, and with these agencies material help and insistent advice as to what to eat. Thus not only was starvation forestalled in a large group of people but in some instances the nutritive deficiencies of years were corrected.

#### CONCLUSIONS

1. In the present-day depression the nutritive state of the American school child has not suffered.
2. There is no widespread undernutrition; the general population as a whole seems to be as well nourished as formerly.
3. Although no doubt there are many exceptions, the vigor of the American working man is not recognizably inferior to that of earlier years.
4. The incidence of deficiency diseases, such as pellagra and nutritional edema, possibly increased somewhat during the first years of the depression, but such diseases are today decreasing markedly in number.
5. Relief agencies have done a good job; the educational influence of their work has added greatly to its effectiveness.

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## LYMPHOPATHIA VENEREUM

WITH SPECIAL REFERENCE AS TO DIAGNOSIS

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Epidemic, infectious, subacute inflammation of the inguinal lymphatic glandular structures has long been recognized in different countries and has been described under a large category of names, many of which are confusing, inaccurate and ambiguous. It is the present consensus that this lymphatic node syndrome should be termed so that there will be no doubt as to its true entity; partly for this reason, one finds such synonyms as "lymphogranuloma inguinale," "tropical or climatic bubo," the "fourth venereal disease" and "Nicolas-Favre's disease" in the literature. Other reasons for the multiplicity of names lie in the fact that there is confusion as to the true concept of the disease, it being often mistaken or linked with lymphogranulomatosis (Hodgkin's disease) and other of the more common lymph node disorders such as granuloma inguinale (granuloma venereum-granuloma pudendi). Of all the various names given to this definite clinical and more or less pathologic disease entity, I favor the term "lymphopathia venereum" as suggested by Wolf and Sulzberger<sup>1</sup> and will use this name throughout this paper. The term "lymphopathia venereum," if universally adopted, will lead to less confusion, will give a more accurate conception of the disease, and yet will embrace the various extra-inguinal localizations that are now recognized as being of identical etiology.

#### HISTORY

This disease per se is by no means a new one, for as long ago as 1859 Chassaignac<sup>2</sup> described inflammations of the groin which pictured in many respects similarities of the present conception of lymphopathia venereum. Velpeau<sup>3</sup> (1865), Nélaton<sup>4</sup> (1890), Brault<sup>5</sup> (1894), Marion and Gandy<sup>6</sup> (1901), Tanton and Pigeon,<sup>7</sup> Rost<sup>8</sup> and many other authors subsequently described the same condition, which Hellerström<sup>9</sup> so adequately discussed in his monograph in 1929. In 1913 Durand, Nicolas and Favre<sup>10</sup> promulgated their articles and set forth the true infectious epidemic nature of the disease, describing its principal symptom complex and evolution under the term "lymphogranulomatose inguinale subaigue." Since then many foreign writers have elected to use "Nicolas-Favre's disease" when speaking or writing on the subject. With the exception of the past five years, little has appeared in the American literature on this interesting disease, although there have been numerous foreign promulgations. There have been a few cases described in the *United States Naval Medical Bulletin* since 1913 as having originated in the tropics. These were reported under the name of "tropical or climatic bubo." Hansmann<sup>11</sup> in 1924 reported four cases under the term

1. Wolf, J., and Sulzberger, M. B.: *Lymphopathia Venerea*, Brit. J. Dermat. & Syph. 44: 192 (April) 1932.
2. Chassaignac, E.: *Traité pratique de la suppuration et du drainage chirurgical*, 1859, p. 354.
3. Velpeau: *Adenitis*, in *Dictionnaire encyclopédique des sciences médicales*, Delorme and Deschambres, 1864.
4. Nélaton, A.: *Semaine méd.* 10: 402, 1890.
5. Brault, J.: *Lyon méd.*, 1895.
6. Marion, G., and Gandy, C.: *Arch. gén. de méd.*, 1901.
7. Tanton and Pigeon: *Arch. gén. de méd.*, 1908, pp. 76-125.
8. Rost, G.: *Arch. f. Schiffs- u. Tropen-Hyg.* 16: 677-693, 1912.
9. Hellerström, Sven: *Contributions to the Knowledge of Lymphogranuloma Inguinale*, Acta dermat.-venereol., 1929, supp. 1, pp. 5-224.
10. Durand, M.; Nicolas, Joseph, and Favre, M.: *Bull. et mém. Soc. méd. d. hôp. de Paris* 33: 274-288 (Feb. 6) 1913.
11. Hansmann, G. H.: *Surg., Gynec. & Obst.* 39: 72-82 (July) 1924.



"nontuberculous granulomatous lymphadenitis." Frei<sup>12</sup> in 1925 proved the disease entity when he discovered the intradermal test, now referred to as the "Frei test." Barber and Coogle<sup>13</sup> in 1927 reported a few cases and designated them under Hansmann's terminology. In 1928 a case with autopsy was reported by Hillsman, Wilshusen and Zimmerman.<sup>14</sup> Since 1930 the American literature has teemed with references, and foremost

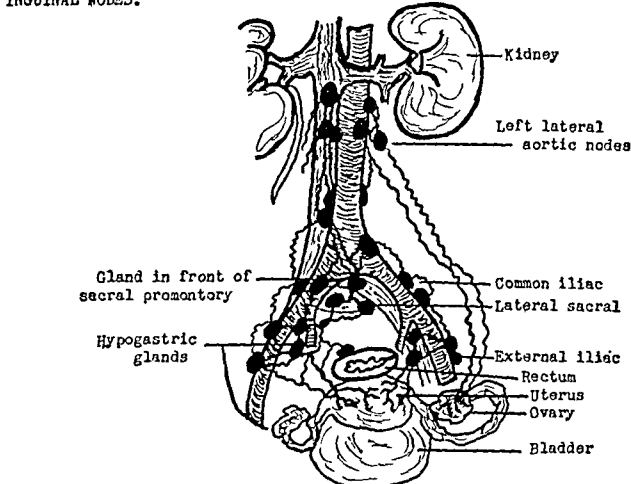
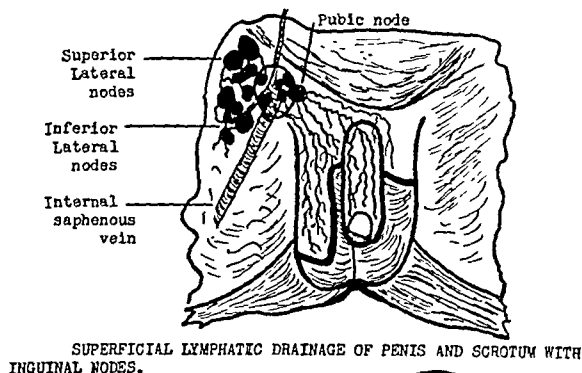


Fig. 1.—The parietal lymph glands of the pelvis with special reference to the lymph drainage from the vaginal vault and cervix.

of these articles are those published by DeWolf and Van Cleve<sup>15</sup> of Cleveland, Sulzberger and Wise<sup>16</sup> of New York, Bloom<sup>17</sup> of New York, Cole<sup>18</sup> of Cleveland and Lehmann and Pipkin<sup>19</sup> of San Antonio, Texas. The latter are undoubtedly responsible for the sudden rise into prominence of lymphopathia venereum in America.

There is no doubt as to the prevalence of this infection in the United States, and, quite contrary to past belief, it occurs with about the same frequency in the temperate and subtropical climates as it does in the tropics. Undoubtedly in the past the failure of true recognition was the inability of the physician to diagnose the condition properly.

#### CLINICAL PICTURE

Lymphopathia venereum is a specific, epidemic, indolent infectious disease due to a specific filtrable virus which is transmissible through the medium of sexual intercourse, for which reason many have termed the condition the "fourth venereal disease." In view of the fact that the venereal origin of this disease has been so well established and the frequency and social importance so clearly understood, Reiter<sup>20</sup> in March 1935 stated that steps had been taken in Germany to have the law of Feb. 18, 1927, for the control of venereal diseases, apply to this clinical entity.

This infection affects young adult males more often than females and is characterized as a subacute, resistant inflammation of the inguinal lymph glands, often resulting in suppuration, abscess formation and chronic fistulation, with a tendency toward healing by retractile scarring and fibrosis. The incubation period, according to Hellerström,<sup>21</sup> is from ten to thirty days and dates from the time of exposure to the appearance of lymph gland involvement. Because of anatomic differences in male and female lymphatic structures, as noted in figure 1, superficial and intermediate inguinal disorders in the female are the exception rather than the rule.

The lymph drainage of the male genitalia is directed almost entirely into the inguinal lymph nodes and then



Fig. 2.—Unilateral inguinal adenopathy or bubo, with variations of positive Frei reactions (forty-eight hours).

into the deep iliac nodes. Therefore, when the initial lesion is on the external genitalia these nodes will become affected. In the female the anatomy of the lymph drainage is quite different. Only the lymph from the vulva is directed into the inguinal lymph nodes, while the lymph from the vagina and cervix

12. Frei, Wilhelm: *Klin. Wchnschr.* 4:2148 (Nov. 5) 1925.
13. Barber, M. A., and Coogle, C. P.: *Pub. Health Rep.* 42:1306-1311 (May 13) 1927.
14. Hillsman, J. A.; Wilshusen, H. F., and Zimmerman, H. M.: *Lymphogranulomatosis Inguinalis: Report of a Case of Twenty Months' Duration, with Autopsy Observations*, *Arch. Dermat. & Syph.* 18:383-392 (Sept.) 1928.
15. DeWolf, H. F., and Van Cleve, J. V.: *Lymphogranuloma Inguinale*, *J. A. M. A.* 99:1065-1070 (Sept. 24) 1932.
16. Sulzberger, M. B., and Wise, Fred: *Lymphopathia Venereum*, *J. A. M. A.* 99:1407-1410 (Oct. 22) 1932.
17. Bloom, David: *Surg., Gynec. & Obst.* 58:827 (May) 1934.
18. Cole, H. N.: *Lymphogranuloma Inguinale the Fourth Venereal Disease*, *J. A. M. A.* 101:1069 (Sept. 30) 1933.
19. Lehmann, C. F., and Pipkin, J. L.: *Lymphopathia Venerea*, *Texas State J. Med.* 29:192-199 (July) 1933.

20. Reiter. *Bull. Office internat. d'hyg. pub.* 27:494 (March) 1935.
21. Hellerström, Sven, and Wassén, E.: *Compt. rend., VIII Congress internat. de dermat. et syph., Copenhagen, 1930*, p. 1147, Copenhagen, Svend Lomholt, 1931.



drains into the lymphatics around the rectum. This explains the frequent dissimilarities of the disease in the two sexes.

In women the disease more often presents itself in the deep pelvic and perianal lymphatics, and so the later manifestations are more commonly seen. After running an indolent, chronic course, the disease resolves itself into esthiomene (chronic ulceration of the vulva with elephantiasis and sclerosis), and the genito-anorectal syndrome (anorectal syphiloma with stricture of the bowel). There may be no subjective symptoms in the female during the active stage of the infection until the appearance of the later manifestations. In men a late manifestation may be elephantiasis of the penis and scrotum, which, according to Stryker and Ploch,<sup>22</sup> is more likely to occur in cases in which the collateral circulation has been disturbed or in which the entire regional lymph system becomes involved in the pathologic process.

**Primary Lesion.**—A careful history and physical examination will elicit the presence of a primary sore in about 50 per cent of cases. Hellerström,<sup>21</sup> in his report of forty-seven cases, states that there were primary lesions in twenty-two. Cole states that in thirty-seven cases of acute infection he noted primary lesions in sixteen. Kimbrough and Lavery<sup>23</sup> have observed a relatively high percentage of primary lesions. This may in part be due to the fact that military personnel are more "venereal minded" than civilians because of the frequent venereal inspections and the consequences that accrue from the attainment of venereal disease.

The history of a small, painless, nonindurated lesion on the genitalia, appearing from three days to three weeks after intercourse, and which rapidly disappears in from five to ten days, followed by inguinal glandular involvement, should immediately lead one to surmise the advent of lymphopathia venerea. Because of the fact that the primary lesion may be so small (often pinhead in size), painless and lasts for so short a time, this part of diagnostic evidence is often overlooked by the patient. This primary erosion is usually dry with sharply defined edges and in the male usually presents itself on the glans penis or prepuce. In the female the portal of entry is often difficult to determine, and primary lesions of the external genitalia are rare. When they do occur, they present themselves in the region of the fourchette and the vagina. Many of the female infections undoubtedly occur through the vagina or cervix, in which case primary lesions would be unnoticed. Phylactos<sup>24</sup> describes four types of lesions which may occur on the glans, prepuce, and like locations: (a) ulcerated type, (b) nodular type, (c) papular type and (d) lymphogranulomatous urethritis. These lesions may occur singly or in multiples. Pseudoherpetic lesions have been described.

As in syphilis, unnatural primary lesions of lymphopathia venereum have been noticed. Curth reported a case of a primary lesion on the tongue, followed by cervical adenitis, and Hellerström gives a history of a surgeon who contracted the infection on his finger while operating on a bubo, followed by typical symptoms.

**Adenitis.**—The onset of the disease is rather insidious and favors the appearance of a systemic infection resembling the symptoms so commonly noted in cases

of a mild septicemia. A few days prior to the swelling of the lymph nodes, the patient suffers from slight headache, anorexia, dorsolumbar pains and generalized discomfort. These symptoms are followed in a few days by an inflammatory involvement of the lymph nodes. In men the first glands to be affected are those of the superficial group in the inguinal region, either the pubic glands or the medial group of the proximal subinguinal lymph glands, which lie in close proximity to Poupart's ligament. The disease progresses very slowly and extends from gland to gland, finally producing a periadenitis. Swelling of the glands is constant and variable, and tenderness becomes more pronounced as the swelling increases. The skin over the glands becomes reddened and, as the periadenitis develops, it becomes attached and fixed down. At this stage, matting of the glands is elicited. As the disease progresses, usually after five weeks from the onset of symptoms, the iliac glands become involved, and at this stage the skin over the affected glands takes on a purplish hue. The latter development of events has been considered pathognomonic by many authors, more particularly the French.



Fig. 3.—A mass of extirpated lymph glands of the inguinal region showing the matting and package effect of the granulomatous mass, and the presence of multiple, intercommunicating abscesses

Along with the gradual development of periadenitis, chills, fever and night sweats are generally noted, with an occasional accompaniment of erythema nodosum. There also develops a moderate leukocytosis, varying from 10,000 to 12,000, with a definite increase in mononuclears. Eosinophilia is constant. Walking becomes more and more difficult, even though pain is not an outstanding symptom.

Eventually softening of the glandular masses occurs and definite fluctuation is noticed. This is usually followed by the appearance of one or many fistulas, which become intercommunicable. These interfacing channels give the affected area the usual honeycomb appearance. Thick, viscid, creamy, yellow pus may exude for a long period, which later becomes sero-sanguineous. Systemic symptoms often disappear long before the fistulas cease draining.

As the fistulous channels develop, and as the disease progresses to the granulomatous stage, the skin becomes folded and thickened, beneath which the matted masses of glands can be distinctly felt. The duration of the process is quite variable, as is also the symptom complex and the severity of the disease. The infection may last from one to several months. Healing, when it does occur, takes place by fibrosis and scar retraction.

22. Stryker, G. V. and Ploch, Bernard: Elephantiasis of the Penis and Scrotum, Arch. Dermat. & Syph. 52: 86-89 (July) 1935.

23. Kimbrough, J. C., and Lavery, H. B.: Personal communication to the author.

24. Phylactos, A.: These de Lyon, Villefranche, Revel du Beaujolais, 1922.

Kitagawa<sup>25</sup> of Japan in 1934 reported thirty-seven cases of this interesting disease and stated that he examined the spinal fluid in thirty of the cases, finding the pressure in all of them abnormally high. The Wassermann reaction was positive in the spinal fluid in three cases, with a positive Meinicke reaction in six. The colloidal gold reaction was positive in practically every case.

Kitagawa also found a constant peripapillary edema and tortuosity of blood vessels. These changes have not always been found in other cases reported but suggest a general infection involving the nervous

Jersild,<sup>27</sup> Frei and Koppel,<sup>28</sup> Stannus,<sup>29</sup> and recently Bloom,<sup>17</sup> it is now definitely established and accepted that esthiomene, anorectal syphiloma and the benign rectal strictures are more or less identical with regard to their etiologic agent, being due to the virus of lymphopathia venereum. Wien, Perlstein and Neiman<sup>31</sup> have reported a case of the rectal syndrome of lymphopathia venereum that came to autopsy. Reichle and Connor<sup>31</sup> have described a case of lymphopathia, with autopsy, which also showed involvement of the retroperitoneal lymph nodes, hip joint, adrenals and kidney.

#### DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

A most careful history and physical examination, together with the positive diagnostic test of Frei, are paramount to the correct diagnosis of lymphopathia venereum. The elicitation of an evanescent primary lesion on the genitalia, followed by a subacute and chronic inflammation of the lymph nodes in the groin, should at least make one suspicious of the condition.

The discovery by Frei in 1925<sup>12</sup> of the specific diagnostic intradermal test, which has been given his name, has greatly simplified the establishing of this clinical disease entity and has paved the way for all the successful research that has since been done in linking these various syndromes under one disease entity.

The Frei test is extremely sensitive and most reliable. According to Wise and Sulzberger,<sup>10</sup> the Frei reaction, if properly interpreted, is one of the most specific test substances in immunologic use. The material for the test is easily procured, provided one has an active case of lymphopathia venereum at one's disposal, and the manufacture of the antigen along with the performance of the test is most simple to do.

Pus from an unopened gland is obtained by aspiration under sterile conditions and is diluted with from five to ten parts of physiologic solution of sodium chloride. This material is then heated at 60 C. for two hours one day and at the same temperature for one hour on the following day. The antigen is then cultured for sterility. For testing purposes, 0.1 cc. is injected intradermally and the reaction is read at the end of twenty-four, forty-eight and seventy-two hours. In patients with the active disease, and also in those who have convalesced, a positive reaction develops in twenty-four hours, which persists for several days. A positive test consists of an inflammatory papule, red and indurated, which is often surrounded by a dull red areola. In some cases, pustulation and even gangrene formation occurs after the papular formation, and this can best be explained by the presence of a hypersensitive patient or hypersensitive antigen. The test is so sensitive that rarely does it become necessary for one to restandardize the antigen or to cross-check the patient. False positive reactions are extremely rare; however, in a very small percentage of true cases of lymphopathia venereum one occasionally notes a negative reaction. According to Sulzberger and Wise<sup>16</sup> there is a definite immunologic relationship between syphilis and lymphopathia venereum, and in some cases of mixed infection one occasionally notes a negative Frei test. However, after antisyphilitic treatment a

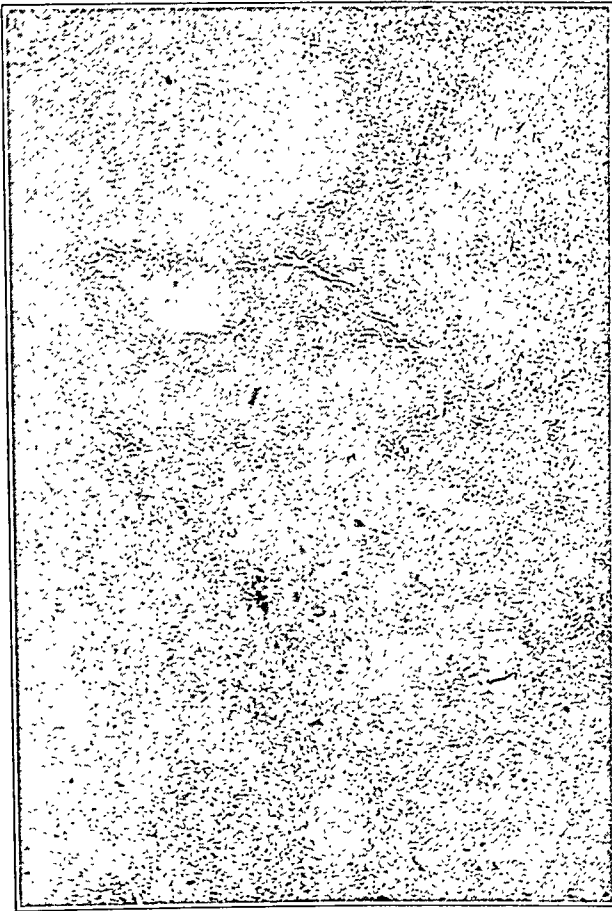


Fig. 4.—Section of an infectious granuloma with abscess formation. Small, irregular abscesses are seen with a palisade-like arrangement of epithelioid cells around their edges. The small arteries show sclerotic changes.  $\times 36$ .

system. It is questionable whether all authors reporting cases of lymphopathia venereum have examined spinal fluid and eyegrounds.

The late manifestations or sequelae, previously mentioned, may appear years later. As the disease proceeds from the subacute to the chronic, such conditions as esthiomene, elephantiasis of the vulva, penis and scrotum, and rectovaginal "syphilomas" may appear, all of which are directly due to localization of the process or to the impediment of lymphatic drainage from retractile scarring and the like.

The relationship of lymphopathia venereum to the problem of esthiomene and the production of inflammatory stricture of the rectum was described for the first time by Huguier<sup>26</sup> in 1848. With the original work of

25. Kitagawa, K.: *Orient. Med.*, Dairen 20: 48, 1934.

26. Huguier, P. C.: *Mem. Acad. nat. d. med.* 14: 501, 1849.

27. Jersild, O.: *Ann. de dermat. et syph.* 7: 74 (Feb.) 1926; *Dermat. Wehnschr.* 96: 433 (March 31) 1933.

28. Frei, Wilhelm, and Koppel, Alice: *Klin. Wehnschr.* 7: 2331 (Dec. 2) 1928.

29. Stannus, H. S.: *A Sixth Venereal Disease*, London, Bailliere, Tindall & Cox, 1933.

30. Wien, M. S.; Perlstein, Minnie O., and Neiman, B. H.: *Inguinale Lymphogranuloma in Its Relation to Stricture of the Rectum*, *Arch. Path.* 19: 331 (March) 1935.

31. Reichle, H. S., and Connor, W. H.: *Lymphogranuloma Inguinale*, *Arch. Dermat. et Syph.* 32: 196 (Aug.) 1935.

repetition of the test will usually yield a positive. The Frei test is usually positive from ten to twenty-one days following the appearance of the adenitis, at which time the allergic state has developed. Possibly a positive test may be obtained in a patient with a previous disorder, while the present infection may be of an entirely different infection. As stated, false reactions are exceedingly rare and when they happen are usually the result of faulty technic or contaminated antigen.

There are several diseases that may be confused with lymphopathia venereum and at times enter into differential diagnosis, but which are often very easily ruled out. In syphilitic adenitis the lymph nodes are hard and discrete and do not usually break down and suppurate. In this condition a positive serologic reaction and darkfield examinations will solve the situation.

Chancroidal bubo more nearly approaches the true lymphopathia venereum than any other disease. Here a chancroid is usually present and the glandular involvement is usually the complication rather than the accompaniment of the disease. Also in chancroidal bubo the infection is more acute and the suppuration more rapid, with a single large area rather than multiple small areas of fistulation.

The presence of Donovan bodies, with noninvolvement of the lymph nodes, usually separates granuloma inguinale from lymphopathia venereum. Careful bacteriologic and pathologic examinations will rule out the simple pyogenic inflammatory lymph nodes. Hodgkin's disease, malignant growths, tuberculosis, leukemia and fungous infections at times complicate the diagnosis, but again these conditions are most easily differentiated.

#### PATHOLOGY

In a study of twenty-one cases of lymphopathia venereum that have been admitted to this hospital during the past nine months, in which affected glands were removed by surgical excision, it is believed that the pathologic picture is not entirely pathognomonic of the entity but is quite suggestive. The tissue excised is composed of a mass of lymph glands of varying sizes, matted together by a subacute periglandular inflammation. The overlying wine colored or dark purplish skin is firmly adhered to this subcutaneous mass and contains from one to several fistulous perforations, the tracts of which can be followed to intraglandular abscesses or suppurating granulomatous areas. Cut sections of the glands often reveal multiple abscess formations, the pus of which is thick and viscid. In many cases the entire gland appears as a honeycomb, owing to the multiple, irregular and varying sized abscesses. The pathologic condition presented varies with the intensity and duration of the infection. The multiple abscesses almost always show intercommunication, and the normal glandular appearance seems to be replaced by a pinkish gray granulation tissue. There is no evidence of caseation.

Histologically the principal picture is that of a subacute or chronic infectious granuloma with multiple abscess formation, the abscesses varying greatly in size and shape. Pseudogummas also are noted. The normal lymph node structure appears to be replaced by a diffuse granulomatous hyperplasia, composed of lymphocytes, plasma cells, epithelioid cells, fibroblasts and an occasional multinucleated giant cell of the Langhans type. The individual follicles or nodules appear lost. Congestion appears prominent, as does also new blood vessel formation. Sharply demarcated from the hyperplastic surrounding pulp are numerous

necrotic areas of varying size and shape, which appear both ramified and discrete. In the center of the abscesses are granular detritus, collections of polymorphonuclear leukocytes and small round cells. Surrounding these centers is a palisading of epithelioid cells and a few mononuclears, and this arrangement is very constant. External to the palisading epithelioid cells, the presence of early fibroblasts with slight reticulum is noticed. The latter condition is noticed about the more discrete abscesses. The capsule of the nodes shows great thickening and consists of dense, moderately hyalinized fibrous tissue. Little evidence of

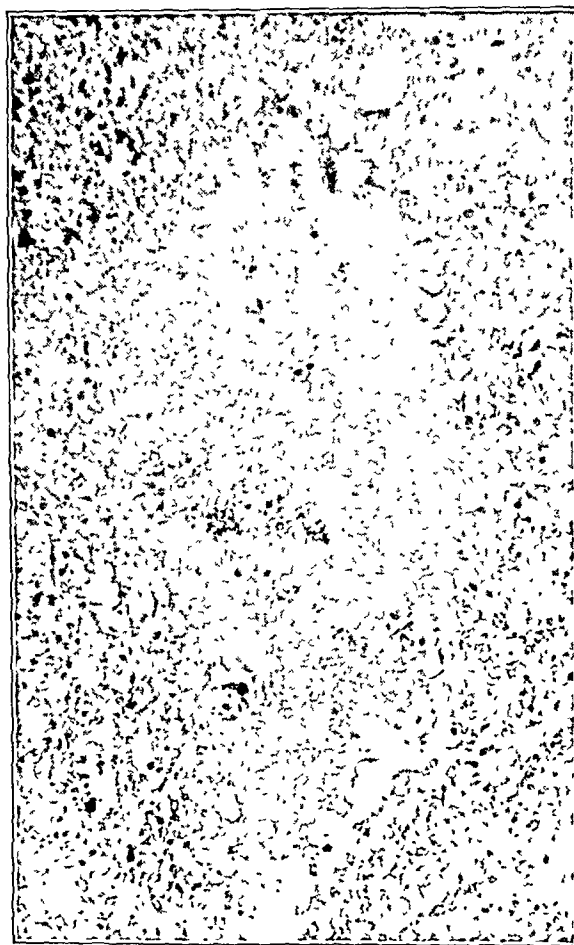


Fig. 5.—A solitary, small irregular abscess with the characteristic palisading of epithelioid cells about the periphery. The centers of the abscesses contain a granular detritus, collections of polymorphonuclear leukocytes and a few small round cells. External to the palisading epithelioid cells, a few early fibroblasts and reticulum are noted.  $\times 330$ .

inflammation is noticed with regard to the capsule. Many of the small vessels show sclerotic changes. Pyknotic bodies are encountered occasionally, particularly in the abscesses.

#### BACTERIOLOGY AND ANIMAL INOCULATION

Bacterial examinations up to the present time have been entirely negative. Occasionally pyogenic bacteria have been encountered in the pus of lymphopathia venereum, but it has been proved that these organisms play no part in the true etiology of the disease. It is now universally accepted that the etiologic agent is a filtrable virus. De Bellard<sup>32</sup> in 1924 is credited with being the first to perform successful animal inoculation

32. de Bellard, E. P. J Trop Med 29:103 (April) 1926.

by the preputial inoculation of a monkey. Later, Hellerstrom and Wassén,<sup>31</sup> Meyer, Rosenfeld and Anders,<sup>33</sup> Freund and Reiss,<sup>34</sup> and Levaditi, Ravaut and others<sup>35</sup> succeeded in transferring the condition to animals. According to the research of these workers, the virus seems to be filtrable, being capable of passing through Berkefeld and Chamberland filters.

D'Aunoy<sup>36</sup> of New Orleans has recently reported 160 cases, with isolation of the virus in seven and with passage of the virus through animals. Inoculation may be performed in monkeys, guinea-pigs and mice.

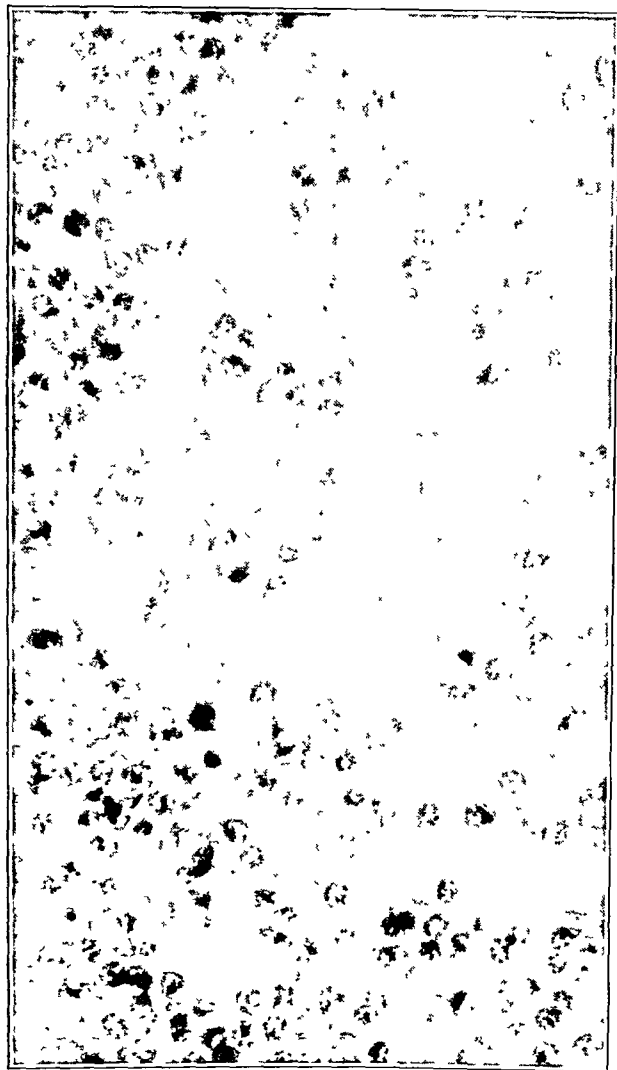


Fig. 6.—The structure shown more clearly of a small discrete abscess, its center composition and the palisading of epithelioid cells. This arrangement is very constant in lymphopathia venereum  $\times 705$

According to Sulzberger and Wise, the virus is quickly destroyed at 60 C., and it can be preserved for ten days at a temperature of 3 C. They state that after forty days it loses its infectiousness and does not resist glycerin or drying processes very well. The virus is destroyed easily by the usual antiseptics such as tincture of iodine, mercurochrome solution and dilute solution of sodium hypochlorite.

#### TREATMENT

Numerous remedies have been advocated, but no single remedy is known to have a specific therapeutic value, and, more certainly, no routine treatment can be recommended. The measures selected and resorted to will necessarily depend on a number of factors such as the form, stage of disease, age and economic status of the patient. In cases of suppururation, a combination of radiotherapy with progressive doses of aqueous solution of iodine associated with sodium thiosulfate is advocated. Sézary and Facquet<sup>37</sup> suggest intramuscular injections of a trivalent antimony salt of thiomalic acid.

It is now generally accepted that surgical excision of the superficial inguinal glands and fistulas is the therapeutic measure of choice in all cases of suppurative adenitis. This procedure in almost all cases results in a cure in from four to eight weeks, even though there is involvement of the deep glands. Rousseau and Adamesteau<sup>38</sup> state that there is no more danger of elephantiasis occurring after operation than after other therapeutic measures. Cole, however, recommends only partial extirpation of the affected nodes, because of the possibility of the development of elephantiasis.

Various other therapeutic methods have been advocated; namely, potassium iodide, salts of copper, iron, arsenic, mercury, the administration of gold preparations, injections of emetine, local applications of tincture of iodine, lead solutions and sulfonated bitumen ointment.

My purpose in this paper is to show that lymphopathia venereum is a definite disease entity of venereal origin and has the possibility of grave consequences. It should be handled with the same administrative methods and control as are gonorrhea and syphilis. It is hoped that the medical profession will become more interested in this condition, so that fewer cases will pass undiagnosed. The problem is more than a dermatogenito-urologic one, for it involves greatly the field of internal medicine, surgery, radiology, clinical laboratory medicine and pathology. With regard to this disease, the surface has only been scratched as far as present knowledge is concerned, and with the proper stimulation and interest on the part of the medical profession at large much will be attained.

#### SUMMARY

1. Lymphopathia venereum, often termed lymphogranuloma inguinale, climatic bubo, and so on, is a specific venereal disease caused by a filtrable virus. The term "lymphopathia venereum," as suggested by Wise and Sulzberger, is advocated because it is less confusing and will embrace the associated extra-inguinal disorders that are a part of the disease entity.

2. The disease is characterized by the appearance of an evanescent primary lesion, often overlooked, followed by a subacute, indolent, inguinal lymphadenitis, which often produces fistulas. The disease course is chronic, may last several years, and may be quite variable as to both course and manifestations. The early symptoms simulate those of a mild case of septicemia.

3. Because of anatomic difference in male and female lymph drainage, the infection tends to localize, in women, in the deeper lymphatic structures, thus

33. Meyer, Kurt; Rosenfeld, Herbert and Anders, H. E. *Klin. Wchnschr.* **10**: 1653 (Sept. 5) 1931.

34. Freund, Helmut, and Reiss, Franklin. *Klin. Wchnschr.* **10**: 1658 (Sept. 5) 1931.

35. Levaditi, C.; Ravaut, P., Lepine, P. and Schoen, Mlle. R. *Bull. Acad. de med., Paris* **106**: 331 (Nov. 17) 1931.

36. D'Aunoy, R., von Haam, E., Lichtenschein, L. *Am. J. Path.* **11**: 737 (Sept.) 1935.

37. Sézary, A., and Facquet, J.: *Bull. Soc. franç. de dermat. et syph.* **41**: 771 (May) 1934.

38. Rousseau, G. and Adamesteau, C. *Presse méd.* **42**: 1489 (Sept. 22) 1934.

invoking the esthiomene and genito-anorectal syndrome. Elephantiasis may be a late sequela to the infection in both male and female.

4. The intradermal Frei test is specific for this infection and remains positive for many years.

5. The pathologic picture, although not pathognomonic, is quite suggestive of this disease entity. Other diseases that may be confused with lymphopathia venereum are most often easily ruled out.

6. The treatment of choice is surgical combined with medical supportive measures. It consists in partial extirpation of the affected nodes, combined with drainage, radiotherapy and the progressive dosage of aqueous solution of iodine and sodium thiosulfate.

7. Geographically, this disease is widely disseminated throughout the world and is not localized in the tropics and seaports. Lymphopathia venereum is not the rarity it is commonly supposed to be.

## EXTRAGENITAL LESIONS OF LYMPHOGRANULOMA INGUINALE

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AND

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In 1913 Durand, Nicolas and Favre<sup>1</sup> differentiated from inguinal adenitis due to chancroid, syphilis and tuberculosis a new venereal disease, which they called subacute inguinal lymphogranulomatosis and which they established as a venereal disease entity. This disease has been variously referred to in the literature as a climatic bubo, tropical bubo, nonvenereal bubo, subacute inguinal periadenitis, fourth venereal disease, strumous bubo of the groin, nontuberculous lymphadenitis, subacute lymphadenitis, malady Nicolas-Favre, hypertrophic bubo and lymphopathia venereum.

The primary lesion on the glans penis, in the vagina or elsewhere may be trivial and evanescent and may entirely escape notice. During an incubation period of from ten to thirty days<sup>2</sup> inguinal adenitis may develop, and this may result in suppuration. In 1925 Frei<sup>3</sup> announced an intradermal skin test, now known as the Frei test, which is characterized by an intradermal nodule appearing from thirty-six to seventy-two hours after injection into the skin of an antigen which is obtained from the pus taken from a suppurating gland of this disease. DeWolf and Van Cleve,<sup>4</sup> who wrote in 1932 the first comprehensive articles on lymphogranuloma inguinale in this country, described the preparation of the antigen and the interpretation of the test in detail. In 1928 Frei and Koppel<sup>5</sup> reported positive Frei reactions in five cases of rectal stricture. Since then Cole<sup>6</sup> and many others have confirmed the importance of the relation of lymphogranuloma inguinale to rectal stricture. In 1930 Hellerström and Wassén<sup>7</sup> announced that they had been able to infect monkeys with the disease by intracerebral inoculation of saline

suspensions of involved gland tissue from a patient with lymphogranuloma inguinale. Meningo-encephalitis resulted after an inoculation of from six to twelve days. They were able to pass the disease through a series of monkeys and maintained that the virus became generalized and that an antigen prepared from the brain, cerebrospinal fluid or lymphatic glands yields a positive Frei test on patients with the disease. In 1931 Hellerström showed that the virus of the disease is filtrable and that monkeys can be infected with such filtrates. In 1932 Ravaut, Levaditi, Lambling and Cachera<sup>7</sup> studied a case presenting rectal stricture without glandular or pelvic lesions and in which no evidence of syphilis, chancroid, gonorrhea or tuberculosis was present. The Frei test was positive. A fragment of rectal mucosa was injected under the skin of a guinea-pig and an adenopathy developed. A piece of the gland inoculated into a monkey's brain gave a typical encephalitis. The presence of the virus in the rectal lesion proves the rôle of Nicolas-Favre disease in the etiology of rectal strictures as well as the specific value of the Frei test.

Surgeons in large charity hospitals see many rectal strictures which are now known to be a manifestation of lymphogranuloma inguinale, but which formerly were called by many syphilis of the rectum. During the past fifteen years of service at the Cook County Hospital one of us (V. C. D.) has seen at least 200 patients afflicted with rectal involvement of what is now known to be lymphogranuloma inguinale. The great



Fig. 1 (case 3).—Biopsy from stricture of rectum due to lymphogranuloma inguinale. This patient later had an ulcer of the transverse colon from the same cause (see figure 2).

majority of these patients were Negro women, about half of whom had syphilis and nearly all of whom had rectal stricture. None of these patients at the time of examination had suppuration of the inguinal glands. Opportunity has been afforded to see the earliest stages of the disease in the rectum in males who had practiced sodomy. The lower 8 cm. of mucosa is bright red and covered with small pinpoint ulcers. Later these ulcers coalesce, and there develops in the submucosa typical shotlike discrete indurations that give to the examining finger the sensation of numerous small elevations. The

From the Surgical Department, Rush Medical College.  
Read before the Western Surgical Association, Rochester, Minn., Dec. 6, 1935.

1. Durand, M., Nicolas, J., and Favre, M.: *Bull. et mém. Soc. méd. hóp. de Paris* 35:274 (Feb. 6) 1913.

2. Hellerström, Sven: *Acta. dermat.-venereol.*, 1929, supp. 1, pp. 5-224. Hellerström, Sven, and Wassén, E.: 7th Internat. Cong. Dermat. & Syph., Aug. 3, 1933; *Ztschr. f. Immunitätsforsch. u. exper. Therap.* 73:114, 1931.

3. Frei, Wilhelm: *Klin. Wchnschr.*, 4:2148 (Nov. 5) 1925.

4. DeWolf, H. F., and Van Cleve, J. V.: *Lymphogranuloma Inguinale*, J. A. M. A. 99:1065 (Sept. 24) 1932.

5. Frei, Wilhelm, and Koppel, A.: *Klin. Wchnschr.*, 7:2331 (Dec. 2) 1928.

6. Cole, H. N.: *Lymphogranuloma Inguinale, the Fourth Venereal Disease*, J. A. M. A. 101:1069 (Sept. 30) 1933.

7. Ravaut, P., Levaditi, C., Lambling, A., and Cachera, R.: *Bull. Acad. de med. Paris* 107:98 (Jan. 19) 1932.

amount of ulceration in the rectal mucosa varies in degree; in some cases the ulceration is slight and the submucosal induration very marked. Several patients have been under observation from the inception of the disease until marked rectal stricture, accompanied, as is usual, with perirectal abscesses or rectovaginal fistulas, was present. A short history of one such case will be given:

CASE 1.—Mrs. A., aged 25, white, who had just been delivered of her first baby, was referred to us because of rectal bleeding and tenesmus, which had been present for one month. She was in general good health. Examination showed superficial ulcerations and marked hyperemia of the rectal mucosa, involving 8 cm. of the terminal bowel. There was beginning induration in the submucosa of the bowel in this area, which gave a pebbled feel to the examining finger. Pus from the ulcerations contained no gram-negative diplococci; cultures of the pus revealed no unusual bacterial flora; the blood Wassermann reaction was negative. The inguinal glands were not enlarged, nor had the patient noticed soreness in the groin. Pelvic examination was negative. There were no urinary symptoms. Since we recognized the lesion as one which led to rectal stricture, and believing as we did that it was venereal in nature but of unknown cause, we advised a course of antisyphilitic treatment and gave the patient instructions in the use of weak silver nitrate enemas. Neither of these procedures made the slightest change in the progressive character of the disease, and as years went by the rectum became more narrow and the induration in the rectal wall more pronounced, and at the same time the general health of the patient began to fail in that she became anemic, lost considerable weight and had increasing difficulty with bowel movements, pus discharge and finally the development of perirectal abscesses. In 1932 we obtained some antigen from DeWolf and Van Cleve and made a Frei test, which was strongly positive. Dr. Loring then gave her a series of intravenous injections of antimony with some general improvement. By this time, however, the whole rectum, as palpated through the vagina, was felt as a hard indurated tube up to the posterior fornix. Rectal examination revealed a tight stricture about 5 cm. inside the anus. A colostomy was advised and refused. Later in June 1935 the patient came into the hospital

rectum was practically nil and the patient's outlook on life had materially improved. The rectum still was markedly strictured but the induration in the wall of the bowel was less.

This patient's history illustrates many of the impressions that we have gained in the observation of a large number of these rectal lesions: that suppuration of the lymph glands is the exception rather than the rule in rectal stricture from lymphogranuloma inguinale; that antisyphilitic treatment is usually without avail and



Fig. 3 (case 3).—Biopsy from ulcer of transverse colon due to lymphogranuloma inguinale in a patient who was having rectal stricture.

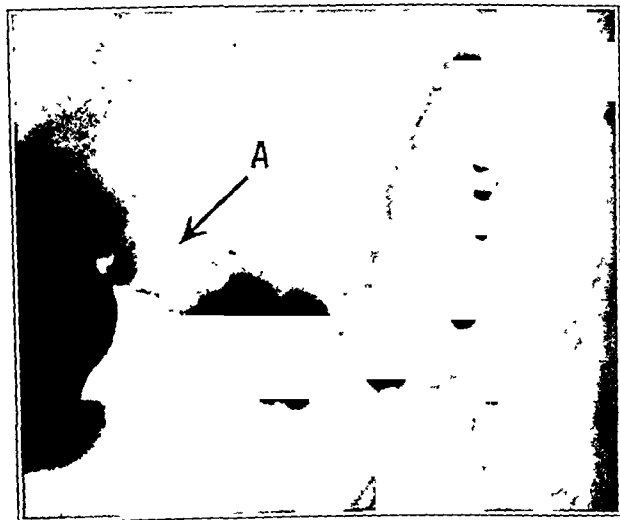


Fig. 2 (case 3).—Filling defect (A) in transverse colon due to ulcer from lymphogranuloma inguinale.

with a temperature of 103 F., a leukocytosis of 28,000, emaciation, an extensive perirectal abscess and rectovaginal fistulas, and suffering from anemia and emaciation. At this time a left-sided colostomy was performed. There was no involvement of the lymph glands at the promontory of the sacrum, no fluid in the abdomen, and the sigmoid, as is usual, was normal. Following the performance of the colostomy the patient's condition began to improve and six weeks later, August 1935, she had gained 20 pounds (9 Kg.); the perirectal suppuration had almost subsided, discharge of pus from the

rectal stricture eventually develops; that in the early stages of the rectal lesion the presence of numerous isolated submucosal indurations are characteristic of the disease; that dilation of the stricture is useless and even harmful; that colostomy results, in most instances, in almost immediate amelioration of the symptoms, although the rectal lesion never becomes entirely inactive, and in those few instances in which the colostomy has been closed the disease has again become active, and, lastly, that since the introduction of the Frei test many doubtful lesions of the rectum have been found to be lymphogranuloma inguinale.

Since our use of the Frei test in 1932 we have examined twenty-seven cases of typical venereal stricture of the rectum, four white females, nine white males, ten Negro females and four Negro males. The duration of symptoms ranged from three weeks to ten years. The Frei test was positive in all the cases. The treatment of this type of inflammatory stricture of the rectum has been unsatisfactory. Dilation does not give permanent relief of symptoms. Various treatments such as carbon dioxide snow, aqueous solution of iodine, arsphenamine, gold salts, 4 per cent copper ammonium sulfate, vaccines and tuberculin have been used without results. In many cases relief of symptoms is obtained only by a colostomy. During the last three years we have used antimony and potassium tartrate or fuadin in the treatment of fourteen cases. In thirteen of the cases treated there was an improvement in the general condition and a decrease in the amount of blood and pus from the rectum. Eleven of the cases were of long standing and there was no change in the stricture. Three cases of a duration of one year or less showed



a definite decrease of the infiltration of the rectal wall. The case of three weeks' duration is symptom free now after ten months of treatment. A recent examination showed only one small ulcer of the mucous membrane. From our observations of these cases there is no doubt that treatment has been of some value. Early diagnosis and treatment may prevent stricture formation.

The experimental work of Hellerström, Levaditi and others has put lymphogranuloma inguinale in the class of constitutional disease and therefore an increasing interest will be manifested in lesions apart from the genitals and rectum, which are a part of the disease picture. The first patient illustrating more extensive extragenital lesions than are usually seen had not only involvement of the rectum with stricture formation but also involvement of the sigmoid, and in the course of the disease several epileptiform seizures developed which have been greatly alleviated by the intravenous injection of antimony. A short history of the case will be given:

CASE 2.—Mrs. H. N., aged 32, admitted to Cook County Hospital, Nov. 30, 1925, had been operated on for hemorrhoids and rectal fistula six years before. Since then she had been troubled with perirectal abscesses, stricture of the rectum and incontinence. Examination showed a tight stricture of the rectum about 5 cm. from the anus, marked induration of the rectal wall as far as it could be palpated through the vagina, numerous rectovaginal fistulas and perirectal fistulas. The Wassermann reaction was negative; there was no history of gonorrhea. December 21, in an attempt to make a left inguinal colostomy, the sigmoid and descending colon were found to be indurated and hyperemic, with a marked foreshortening of the mesentery of the sigmoid. The process in the rectum seemed to have continued upward, involving the colon. A cecostomy was done. The patient was lost sight of until Aug. 1, 1927, at which time she was admitted with abdominal pain, distention and diarrhea, and it was decided to do an ileostomy to side-track completely the fecal stream from the lower portion of the colon and rectum. Sept. 27, 1932, she returned, saying that since 1928 she had been having spells of unconsciousness. The first one came on suddenly and without warning while she was working at the sewing machine. She was taken to the hospital, where she remained in a comatose state for four days. The diagnosis at this time was idiopathic epilepsy, and she was treated with phenobarbital. In 1932 the attacks of unconsciousness increased in frequency until, in February 1933,



Fig. 4.—Lymphogranuloma inguinale affecting tongue. (Courtesy of Dr. David Bloom)

she was having from four to six attacks a week, each one lasting about two hours. At this time the Frei test was made and was strongly positive. In February 1933 she weighed but 85 pounds (38.6 Kg.). She was then given antimony and potassium tartrate intravenously, the dosage being 10 cc. of 1 per cent solution twice a week. Later fuadin, 5 cc. twice a week, was given intramuscularly. Since then she has been continuously treated and has gradually improved. She now weighs 123 pounds (55.8 Kg.). From the very start of the treatment with antimony there was a decrease in the frequency and intensity of her attacks of unconsciousness. She has gone

five weeks without an attack. She now can tell when they are coming. The duration of the attacks is now from one to ten minutes. The only complaint about the intestinal tract is the presence of the ileostomy and the cecostomy, the latter not being able to be closed because of the tight stricture of the rectum. When the cecostomy was closed, toxic symptoms similar to those occurring in a closed loop of bowel appeared.

It is, of course, obvious that the epileptiform attacks in this patient may not be due to encephalitis caused by lymphogranuloma inguinale, although the possibility is



Fig. 5 (case 4).—Ulcer at base of tongue with suppurating submaxillary and supraclavicular glands. Biopsy of this ulcer is shown in figure 6.

interesting and suggests the use of the Frei test in other cases of epilepsy. The extension of the rectal inflammation into the colon seems highly probable, especially in view of the next case to be reported, which instances the formation of a large granulomatous ulcer in the transverse colon and the repeated spontaneous closure of colostomies due to extension of the lymphogranulomatous disease into the colon:

CASE 3.—Mrs. Maud J., white, aged 31, entered the Presbyterian Hospital July 5, 1925, with a history of perirectal abscess ten years before, which had been operated on several times and finally opened into the rectum. In February 1925 diarrhea developed with from six to twelve stools a day, accompanied by chills and fever. She had lost 25 pounds (11.3 Kg.) and was short of breath and anemic. Rectal examination revealed a tight rectal stricture 5 cm. from below, with induration of the bowel wall felt through the vagina as high as the posterior fornix. There were also numerous submucosal infiltrations palpable by rectal examination. Fluoroscopy showed the process limited to the rectum. The blood Wassermann reaction was negative. In November 1925, diarrhea and weight loss continuing and all treatment failing, a left inguinal colostomy was done. No pathologic condition was present in the sigmoid or adjacent colon. Following this operation she gained 20 pounds (9 Kg.) and the diarrhea ceased. In July 1927 she had gained 40 pounds (18 Kg.). The rectum at that time was still strictured and showed superficial ulceration of the mucosa. Biopsy of the rectal tissue showed round cell infiltration of the submucosa (fig. 1). There were no giant cells or tubercle formation. In January 1930 she returned, complaining of abdominal cramps and the passage of old blood from the colostomy. An x-ray examination showed a filling defect in the transverse colon which was diagnosed carcinoma (fig. 2). January 29, laparotomy revealed a large flat ulcer on the mesenteric border of the first part of the transverse colon. The ulcer was 2 inches (5 cm.) long and nearly encircled the bowel. There were small soft glands in the mesentery which did not feel carcinomatous. The lesion in the bowel did not look like a carcinoma. The liver was negative, as was a general abdominal exploration. The portion of the transverse colon containing the ulcer was removed by an obstruction resection operation, leaving a double barreled colostomy in the transverse colon.

The histologic study of the flat ulcer, which had involved the muscularis of the bowel, showed round cell infiltration without giant cells or tubercle formation similar to the histologic picture found in the rectum (fig. 3). The histologic diagnosis

was granulomatous ulcer of the colon. Cultures of pieces of the ulcer revealed no unusual organisms, *Bacillus coli* predominating. The transverse colon colostomy was closed. In January 1931 the patient returned, complaining that the inguinal colostomy was closing. Examination showed it to be inflamed and covered with granulation tissue, leaving but a very small opening into the bowel. Under procaine hydrochloride anesthesia the bowel was mobilized and divided so that the opening in the sigmoid was about 3 inches (7.6 cm.) long. The edges of the mucosa were sewed to the skin. August 4, passage of old blood



Fig. 6 (case 4)—Biopsy from base of tongue at site of an ulcer due to lymphogranuloma inguinale.

and pus from the colostomy, weakness, nausea and vomiting, abdominal cramps and loss of weight were reported.

An x-ray examination revealed a filling defect in the descending colon below the splenic flexure, which had the same appearance of the defect in the transverse colon that had been previously excised. At this time a colostomy was made in the middle portion of the transverse colon so that the lesion in the splenic flexure could be side-tracked from the fecal stream and be treated by various types of irrigations, all of which had no beneficial effect. In June 1932 the sigmoid colostomy had entirely closed and, because of large amounts of pus and blood draining retrograde through the transverse colon colostomy, an attempt was made to reestablish the sigmoid colostomy, which failed because of obstruction of this portion of the sigmoid. About this time a Frei test was made and found strongly positive, and intravenous injections of antimony and potassium tartrate were started. In spite of the treatment, the colostomy of the transverse colon became superficially infected and began to contract so that the opening in it decreased to the size of the tip of the index finger. This was enlarged surgically on several occasions. The injections of antimony and potassium tartrate were kept up with intermissions for the next two years, with considerable general improvement of the patient's health but discharge of pus from the colostomy, and more or less diarrhea continued. Biopsy of the material around the colostomy revealed the same picture as that seen in the flat ulcer of the colon and in the tissue from the rectum. In December 1934 the patient moved to Bethlehem, Pa., where she was advised to see Dr. W. L. Estes, who wrote that she had lost 20 pounds. Subsequently she died.

In all probability this patient suffered from an involvement of the rectum and colon with lymphogranuloma inguinale of a particularly virulent sort. No biopsy of the material ever revealed manifestations compatible with tuberculosis, whereas throughout the disease the Frei test was strongly positive and the Wassermann reaction was negative. Treatment was

of little or no avail. The course of this disease suggests the use of the Frei test in other obscure granulomatous lesions of the colon.

Prior to the establishment of lymphogranuloma inguinale as a definite venereal disease, several instances had been reported in which injury to the surgeon's finger during operation on inguinal bubo had resulted in axillary adenitis and, in one surgeon, a positive Frei test twenty-three years later. Hilding Bergstrand<sup>8</sup> in 1928 suggested that lymphogranuloma inguinale might manifest itself as a generalized disease with efflorescences in the throat and reported the case of a man, aged 46, with dysphagia, and a red soft palate and pharynx covered with small granules that were red but not ulcerated. Six months later, inguinal and axillary adenopathy were present. A biopsy of the lesions of the throat were variously diagnosed as syphilis and tuberculosis. The Wassermann reaction was negative and the Frei test was positive. In 1931 Buschke and Curth<sup>9</sup> reported a case in which erosions on the tip of the tongue and cervical adenitis developed after improper relations with a prostitute. The Frei test and the blood Wassermann reaction were positive. Anti-syphilitic treatment had no effect on the lesion on the tongue.

David Bloom<sup>10</sup> reported the case of a man, aged 45, who after improper relations with a prostitute developed a painful nodule on the tongue (fig. 5), which he cut open with a razor. The anterior third of his tongue became enlarged and indurated (fig. 4); the mucosa on the upper and under surface was granular.

There were many glands enlarged in the submental region. The temperature was 104 F. The Frei test was positive with five different antigens; the blood Wassermann reaction was negative. A biopsy on the tongue showed hyperplasia of the epithelium and edematous connective tissue with numerous lymphocytes beneath the epithelium. The pus obtained from broken down cervical glands was sterile and when an antigen was made from it gave positive Frei reactions on five patients known to have lymphogranuloma inguinale. Guinea-pig inoculation was negative. Bloom treated this patient with intravenous injections of from 5 to 7 cc. of 1 per cent

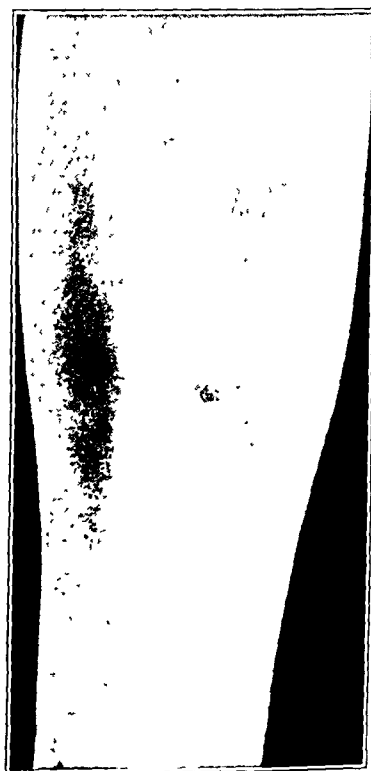


Fig. 7 (case 4)—Positive Frei test in case presenting ulcer of tongue from lymphogranuloma inguinale

8. Bergstrand, Hilding. *Acta otolaryng.* 12: 461, 1928.  
9. Buschke, A., and Curth, W. *Klin. Wchnschr.* 10: 1709 (Sept 12) 1931.  
10. Bloom, David. *Lymphogranuloma Inguinale of Tongue and Cervical Glands*, *Arch. Dermat. & Syph.* 28: 810 (Dec.) 1933.

antimony and potassium tartrate, giving altogether 130 cc. The lesion not receding rapidly, he gave the patient fifteen subcutaneous injections of his own antigen, starting with 2 cc. and increasing the dose to 2.5 cc.

Coutts,<sup>11</sup> working in the University of Santiago, Chile, believes that tongue lesions in sexual pervers are common. The tongue becomes swollen and infiltrated but is not especially painful. The cervical lymph glands become enlarged. Many of these patients show a positive Kahn test but show no improvement on anti-syphilitic treatment. He reports twelve such cases that gave a positive Frei test. The lesions persisted a long time, and one patient died.

Case 4, in which a large ulcer appeared on the floor of the mouth and base of the tongue, presents an unusual picture of lymphogranuloma inguinale and, in keeping with the extragenital lesions reported, strongly indicates that the ulcerating lesions of the disease take their origin by contact infection and that the lymphatics are secondarily involved, as they are in any other infection. This is in keeping with our feeling that the rectal lesions of the disease are contact infections occurring in women with vaginal infection, which because of uncleanness directly contaminates the rectum, and occurring in perverted men practicing sodomy:

CASE 4.—E. E., a white man, aged 52, married, referred by Dr. V. M. Leech, entered the Presbyterian Hospital, Nov. 21, 1934, three weeks after a small ulcer had developed on the floor of the mouth near the attachment of the tongue. The only etiologic factor obtained was the possibility of a slight cut when the patient licked the glued flaps of some envelopes. There was very slight discomfort from the lesion, which gradually increased in size and discharged a thick purulent material. His physician treated the ulcer with a caustic, but a week before admittance the submaxillary, submental and supraclavicular glands became swollen, and chills and a temperature of 103 F. developed. He had a severe headache at the time of entrance into the hospital; the patient had lost 15 pounds (6.8 Kg.), was pale and had thick speech. General examination was negative; the genitalia and rectum were normal. Urinalysis was negative. Blood pressure was normal. On examination of the mouth a flat ulcer, 4 by 3 cm., with raised edges and a foul base (fig. 5), covered with thick purulent exudate and indurated to the touch, was present on the floor of the mouth and running upward for 1 cm. on the base of the tongue. The elevated edge of the ulcer consisted of numerous nodules. The lesion was only slightly tender to touch. Both submaxillary regions were markedly swollen and reddened and were fluctuant. Both supraclavicular regions contained large tender glands, which subsequently broke down. There were large discrete glands palpable along the posterior border of the sternomastoid muscles. The axillary glands and epitrochlear glands were very slightly enlarged. The blood Wassermann and Kahn reactions were negative. The diagnosis lay between syphilis, tuberculosis or a granuloma of unknown origin. Cultures were made from the surface of the ulcer and at operation, when the submaxillary glands and supraclavicular glands were drained, a biopsy was made from the indurated edge of the ulcer and guinea-pigs were inoculated with a piece of the tissue as well as with pus from the submaxillary abscesses. When killed, the pigs were normal. Aerobic and anaerobic cultures from the pus from the glands were uniformly sterile. Smears showed no organisms. Cultures from the ulcer showed gram-plus cocci which were *Streptococcus viridans*. Anaerobic cultures showed gram-positive cocci and gram-negative rods. No tubercle bacilli, spirochetes or fusiform bacilli were found.

The biopsy material from the ulcer showed chronic inflammatory tissue without tubercle formation or giant cells (fig. 6). Because of the unusual character of the lesion, a Frei test was made, which was strongly positive with five different antigens (fig. 7). An antigen prepared from the pus obtained from the neck gave a positive Frei test in five cases known to be lymphogranuloma inguinale. The patient was now given injec-

tions of antimony and potassium tartrate intravenously, 10 cc. of a 1 per cent solution being used. Subsequently 3 cc. of fuadin intramuscularly have been given for two weeks with a two weeks free interval to the present time. The ulcer on the base of the tongue slowly healed until August 1935, at which time it was entirely healed, although the floor of the mouth was still indurated. There was an occasional exacerbation of infection in the glands of the neck, although by August 1935 there were but a few small palpable glands along the sternomastoid muscles. The general health of the patient has returned to normal.

#### SUMMARY

1. The importance of contact infection in lymphogranuloma inguinale has not been sufficiently emphasized.
  2. Rectal strictures from lymphogranuloma inguinale develop without inguinal gland suppuration in most instances. It is suggested that contact infection from vaginal secretions in the female and by perverted habits in the male is the usual manner of infection.
  3. Lymphogranuloma inguinale may cause serious ulcerating lesions in the colon or in the mouth, and it is suggested that the Frei test be more frequently used in granulomatous lesions of unknown origin. The relation of lymphogranuloma inguinale to meningo-encephalitis of unknown origin should also be suspected.
  4. Colostomy offers the best method of treatment of marked rectal stricture from lymphogranuloma inguinale; inactivity but never cure of the lesion results.
  5. Treatment of lymphogranuloma inguinale has not been satisfactorily developed, but the use of 1 per cent antimony and potassium tartrate or fuadin intramuscularly offers some prospect of amelioration of the disease.
- 59 East Madison Street.

## EPITHELIOMA OF THE SKIN OF THE BRIDGE OF THE NOSE

### REPORT OF A CASE

MILTON FRIEDMAN, M.D.

AND

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Epithelioma of the skin, when small, can be readily treated by many different methods and technics. When it is extensive, a specially designed means of handling the lesion is required.

In the case herewith reported there was an extensive basal cell epithelioma of the skin originating at the inner canthus of the eye and bridge of the nose. Because of the size and extent of the lesion, it was deemed advisable to treat the lesion with massive doses of low voltage roentgen rays.

### REPORT OF CASE

W. C., a white man, aged 49, admitted to the eye service at Bellevue Hospital, Aug. 19, 1935, complained of a large, tender, painful, foul-smelling mass over the left eye. Because of the evident malignant condition, the patient was transferred on the following day to the radiation therapy service. The past history was irrelevant, except that the patient's mother died of carcinoma of the stomach, and two aunts had a cancer of the nose, similar to his lesion.

Three years before admittance, while the patient was in Central America, the lesion began as a minute, wartlike growth on the left side of the nose. It was not tender or painful. Several times the patient pulled out the growth, but each removal was followed by a recurrence. After one year the site of the lesion became red and inflamed. A physician diagnosed the growth as a skin cancer but administered no treat-

11. Coutts, W. E.: *Dermat. Wechschr.* 97: 1664 (Nov. 25) 1933.

From the Radiation Therapy Department, Bellevue Hospital, Dr. Ira I. Kaplan, director.

ment. The lesion continued to increase in size, and in February 1935 the patient entered a hospital, where a cherry-sized lesion was removed with surgical endothermy. Healing was complete in two months, leaving almost no scar.

In June 1935 a red pimple again appeared at the original site and grew so rapidly that it reached the size of an egg in about



Fig. 1.—Lateral view of lesion before treatment.

two weeks. Roentgenographic examination at this time revealed involvement of the nasal bone. No treatment was given, but the patient was advised to seek treatment at a cancer institute.



Fig. 2.—Anterior view of lesion before treatment.

The patient then returned to the United States and entered Bellevue Hospital August 19. In the interim the lesion grew, became necrotic and infected, and bled almost continuously. The patient had lost 47 pounds (21.3 Kg.) in seven months and entered the hospital in a moribund, cachectic condition.

When first examined, he was found to be semicomatose, stuporous, pallid and cachectic. Little history was obtainable at

this time. Protruding apparently from the left orbit was a large, spongy, friable, extremely tender growth, covered with a foul-smelling, necrotic, bleeding membrane. It extended from the outer canthus of the left eye over the bridge of the nose to a position overlapping the inner canthus of the right eye. It extended vertically from the left eyebrow to the level of the nasolabial junction. The tumor measured 7 cm. in diameter and protruded 5 cm. from the surface of the face. The left eye was completely obscured by the tumor and could not be examined (figs. 1 and 2). The cornea of the right eye was clear, but the conjunctiva was inflamed and covered with a mucopurulent exudate. The photophobia was so intense in this eye that no light impulses could be tolerated. The slightly edematous lids were held continuously shut. Thus the patient was practically blind. It could not be ascertained whether the growth had originated from the orbital cavity or from superficial tissues. There were no palpable cervical nodes.

The Wassermann reaction was negative. The blood count was 3,100,000 red blood cells, 27,000 white blood cells, 87 per cent being polymorphonuclears and 13 per cent lymphocytes. The hemoglobin was 60 per cent. Urinalysis revealed nothing abnormal. The temperature ranged from 98.6 to 101 F.



Fig. 3.—Section of lesion under low power demonstrating the papillary character of the cell group configurations and the resemblance of these papillae to the stratified squamous epithelium.

Biopsy was done and examination of the specimen revealed an epidermoid carcinoma, with a plexiform and papillary arrangement of the cells. The cell type was difficult to classify, but in some areas prickle cells connected by intercellular bridges could be recognized. The histologic diagnosis was papillary squamous cell carcinoma (figs. 3 and 4).

A roentgenogram disclosed almost complete destruction of both nasal bones, due partly to pressure erosion and partly to infiltration. There could be seen only a faint, irregular, residual outline of the bone.

Because of the marked illness of the patient, roentgen therapy was advised. The first treatment, given August 22, consisted of 4,000 roentgens (measured in air), which was equivalent to ten skin erythema doses. The factors employed were 100 kilovolts, 4 milliamperes, no filter, target-skin distance 30 cm., thirty-three minutes' exposure time and a circular portal 7 cm. in diameter. The surrounding tissues were carefully screened off with sheet lead cut to the exact contour of the lesion. This roentgen treatment was given in an attempt to shrink the lesion and reduce the secondary infection, with the idea that surgery might be carried out later.

One week after the first treatment, August 22, an attempt was made to remove as much of the tumor as possible with the endothermy knife. The patient's poor general condition did not warrant a general anesthetic. No local anesthesia could be employed, because the tissues around the base of the

lesion were inflamed and tender. Furthermore, we were not sure at the time that the growth did not originate from the orbital cavity, under which circumstances a local anesthetic would be even less effective. There was so much liquefaction necrosis of the tumor that the endothermy cutting knife could not function properly. The bleeding was profuse. Peculiarly enough, this procedure caused such pain even in the superficial necrotic portions of the tumor mass that only about 20 per cent of the mass could be removed, and most of this was plucked off with forceps.

The first day after the operation the patient rapidly grew more stuporous, becoming incoherent and irrational, and had to be restrained. This condition lasted for several days and then gradually cleared up under supportive treatment, consisting of intravenous and subcutaneous injections of saline and dextrose solutions and stimulants.

One week after the operation, September 3, the second treatment of 4,000 roentgens was given. At this time there was very slight further shrinkage of the mass. A third dose of 4,000 roentgens was given one week later, September 10. Following this the mass began to shrink very rapidly, until October 3, three weeks later, it had reached 20 per cent of its original size and a fourth treatment of 4,000 roentgens was given. Only as the shrinkage progressed were we able to ascertain definitely that the mass had not arisen from the orbital cavity but from the skin around the inner canthus of the eye and the side of the nose. The tumor had merely rested on the eye, compressing and pushing the lids apart.

During this period the patient's general condition rapidly improved and vision was slowly returning to the right eye, although he was still suffering from a marked photophobia. October 14 the fifth treatment of 4,000 roentgens was given. The patient could now distinguish objects with his right eye. The left eye was almost completely uncovered but he could not open the lids, owing to the long period of inactivity. All that remained of the lesion was a crater, 3 cm. in diameter, with rolled raised edges composed of neoplastic tissue, in the center of which was a pedunculated mass, measuring 1 by 1.5 by 2 cm. At this time, the patient's blood count was almost normal.

The left eye was now found to be completely degenerated as a result of pressure necrosis produced by the tumor. We

November 12 the sixth and final treatment of 4,000 roentgens was given. At this time it was seen that the tissues in the center of the small residual crater had infiltrated and destroyed the nasal bone. In spite of the danger of radiation osteitis and osteomyelitis, since there was only 2 mm. of tissue covering the eroded bone the final treatment was given through a portal which now measured 2 cm. in diameter.



Fig. 5.—Appearance of healed lesion, twenty-one weeks after onset of treatment. The left eye, which has twitched, is a glass eye. The residual anatomic defect consists of a slight depression of the bridge of the nose.

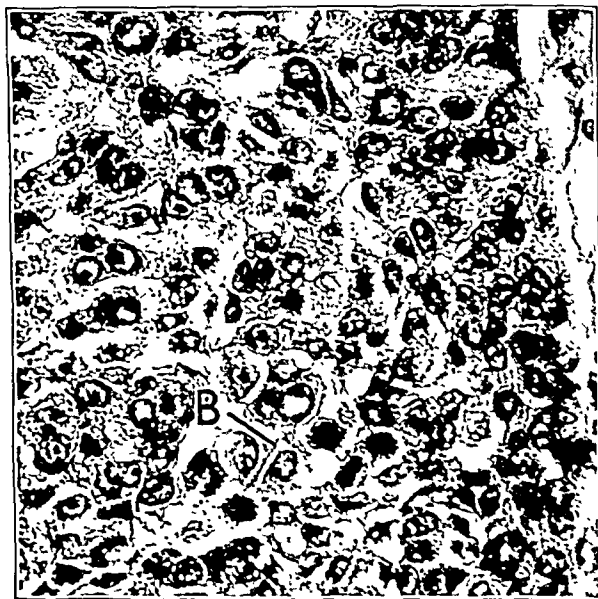


Fig. 4.—Section of lesion under high power showing the marked resemblance to the stratification seen in the normal skin, including a basal layer and a prickle cell layer with intercellular bridges (B).

do not believe that the treatments contributed to the destruction of the eyeball, because we were well able to protect it with lead from the influence of the rays and because other adjacent tissues which were exposed to potentially larger doses of x-rays were relatively unscathed.

By December 10 the lesion had healed completely, leaving only a small depression on the lateral left side of the bridge of the nose measuring 0.5 by 1.2 cm. It was completely epithelialized. December 11 the left eye was eviscerated and one month later was replaced by a glass eye. Roentgenograms of the nasal bones, taken Jan. 13, 1936, showed partial irregular calcification with reformation of the nasal bones almost to their normal configuration. On February 15 the patient won first prize in a rifle shooting contest.

#### COMMENT

Widmann<sup>1</sup> and Grier<sup>2</sup> have developed and popularized the use of this type of radiation in shaving down successive layers of bulky tumors by employing escharotic doses of nonpenetrating roentgen rays. There is considerable latitude in the technic recommended. The voltage may range from 100 to 120 kilovolts, but the rays must be unfiltered. The distance and intensity are of no great consequence. The prime requisite is that the rays be nonpenetrating. The ideal unit dose and the time intensity factors are still to be delineated. Grier's maximum dose was 8,000 roentgens (measured with back scattering) delivered in four or more treatments over a period of one week. This dose, which is much less than our total dose of 24,000 roentgens (measured in air), is probably meant for smaller lesions.

Our principles more closely follow Widmann's suggestions, which entail the administration of single

1. Widmann, B. P.: Further Observations on the Use of Unfiltered Roentgen Rays for Superficial Cancers of Wide and Deep Involvement. *Am. J. Roentgenol.* 34: 644-652 (Nov.) 1935.  
2. Grier, G. W.: Radiation Therapy of Cancer of the Skin. *Am. J. Roentgenol.* 32: 206-210 (Aug.) 1934.

weekly doses of 2,500 roentgens (measured in air) or 1,500 roentgens, depending on whether the lesion is a bulky, spherical mass or a relatively flat indurated ulceration, except that our unit dose is larger. The interval of one week or more between treatments allows sufficient time for response to the irradiation. Thus the subsequent treatment may be planned for a smaller lesion, permitting more careful protection of the surrounding normal tissues, from which the growth has receded. After the first three treatments have been delivered in the first two weeks, it seems wise to wait for two or three weeks before resuming further therapy in order to get the full cumulative effect of the early treatments.

A feature of this technic is that there is little tendency for the remaining tumor cells to become radiation fast, such as occurs when a more penetrating ray is employed, which produces a partial desmoplasia in the deeper cells, giving them more radioresistant characteristics.

Our treatments were given in units of ten skin erythema doses, or 4,000 roentgens (measured in air). This does not accurately express the dose delivered because, with the progressive shrinkage in the size of the portal used, the slight decrease in backscattering depreciates the amount of radiation that reaches the tissues.

This technic is ideally suited for noninfiltrating lesions such as basal cell epitheliomas. However, the successful treatment of certain types of infiltrating squamous cell epitheliomas, which have a tendency to rapid extension, is complicated by the exclusive use of this procedure. We have had several instances wherein the local lesion has been completely destroyed and the defect healed over following the use of low voltage roentgen rays, only to be followed in a short time by the appearance of a halo of multiple, papular, subcutaneous nodules around the lesion, as the result of growth of peripheral subcutaneous extensions of the primary tumor, which could not be felt and could not be attacked by the rays because they were lying underneath the normal skin, which would have sustained an irreparable x-ray burn if exposed to these large doses. Therefore, in the presence of an actively growing carcinoma with a tendency toward rapid infiltration and metastasis, the low-voltage technic may be employed for several treatments in order to remove, in the most conservative fashion possible, the bulk of the mass. It should soon be replaced by the use of the more penetrating higher voltage roentgen rays or radium, with a selective intent.

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**Fish: A Billion Dollar Industry.**—Nearly 3,000,000,000 pounds of fish make up our annual catch. If all these fish were landed at one port, it would require ten full-size freight trains moving every day in the year to haul them to the market. These fish bring a total income of over \$60,000,000 to 117,000 fishermen. When we include manufacturing and distribution connected with the fisheries, we find that we have a billion dollar industry. Fish occupies a unique place in the diet of the nation. The public has become vitamin conscious within the past decade. All the vitamins except E are present in varying amounts in the fish or shell-fish products. Iodine is another substance which is apt to be lacking in our diets, especially if we live in inland cities. Inclusion of fish in the diet supplies this necessary element, as well as the calcium and phosphorus which build healthy bones and teeth. Iron and copper . . . are present in oysters.—Bell, F. T.: *Fish and Their Management*, *Talks* 1:32 (April) 1936.

## DIAGNOSTIC DIFFICULTIES IN BONE TUMORS

ROBERT D. SCHROCK, M.D.

OMAHA

The medical profession, in its constant search for added knowledge in the combat of human frailties, finds itself periodically riding waves of interest and enthusiasm on particular subjects of study. In a review of publications over any period of years there is discovered a preponderance of literature on the popular subject of that day.

In orthopedic surgery there is found, over distinctive periods of years, a flux of literature indicative of the then major interests in scoliosis, muscle tendon transplantations, foot stabilizations, low back derangements

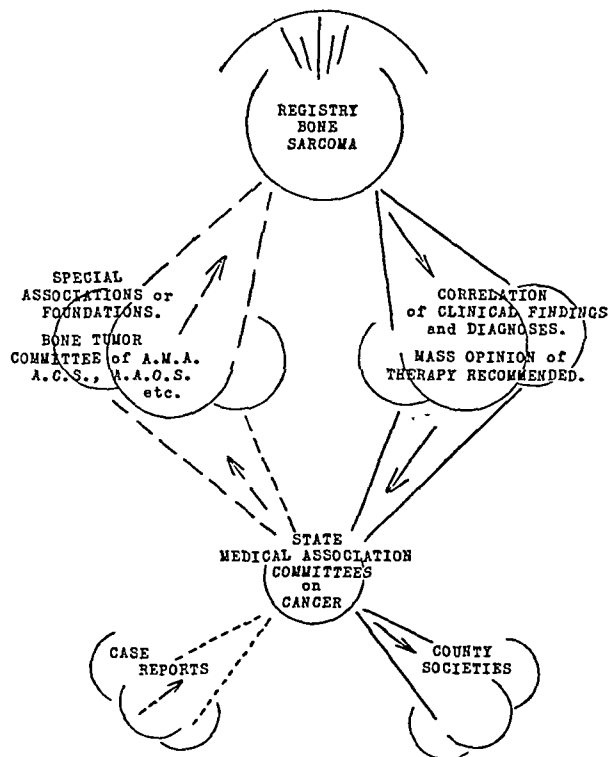


Fig. 1.—Plan for correlation of national agencies through membership of local societies for collection and dissemination of data on bone sarcoma.

with their fusions, arthrodesis for tuberculous joints, and open reduction of congenital misplacement of hips. Resulting from these periods of intensive interest, opinions have been well crystallized and subsequent methods of therapy well established as promising most for the ultimate welfare of the patient.

At the present time the popular problems are fractures and bone tumors. The former is intriguing because of the increase in serious injuries. The education of the public to feel that dysfunction and deformity need not always result is demanding increased efficiency of the doctor in charge. The standard of good fracture management is gradually being raised to a better level. This has resulted from extensive study by special groups, their selection of the best methods and wide dissemination of this information to both the profession and the public.

Owing to lack of space, this article is abbreviated in *THE JOURNAL* by the omission of several illustrated case reports and a bibliography. The complete article appears in the author's reprints.



The perplexing problem of bone tumors is now being attacked on a wide front. The early scouting and plan of campaign in this country have been well laid by Drs. Ernest A. Codman, Joseph C. Bloodgood, James Ewing and William B. Coley. In recognition of their coordinated efforts the American College of Surgeons established in 1921 the Registry of Bone Sarcoma. This institution is characteristically American. Its purpose is centralization of data and material, diffusion of education and information, and assistance to the profession at large for the solution of individual bone tumor problems. The efforts of these men have stimulated many associates to the collection of material and painstaking analyses, adding much to present-day knowledge. The cause of malignancy in bone is still unknown. The theories applicable to cancer are identical in their application to new growths of mesenchymal tissues. Clinical study of the development of individual bone growths has not been in general as detailed as has been the study of the cellular development. There is yet to be obtained valuable information from the observation of new bone growths from the time of their earliest discovery through their life history to its termination in individual cases. For this, extensive collection of histories of carefully followed cases is a necessity.

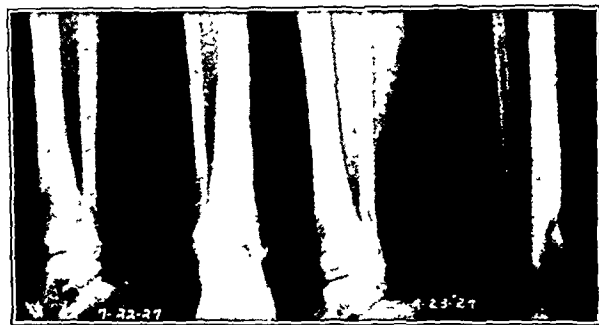


Fig. 2 (case 1).—Antecedent infectious pathologic changes in contiguous bone. Osteomyelitis of the tibia, duration five and one-half years. Ewing's tumor of the fibula; duration one and one-third years. Multiple metastatic lesions. Death.

There are numerous committees for the study of cancer. Each national medical or surgical association has provided itself with a committee for this purpose. Special research funds are allocated for this purpose by various foundations. There are now developing in various state medical associations cancer committees subdivided for special lines. California has probably led the way. The state committee membership is drawn largely from the group of men serving in similar committees of other organizations. Duplication of effort is the rule.

Effectiveness of effort and better coordination of results seem feasible by correlation of these national agencies through the membership and organization of the state societies with their component county medical units. Their purpose is acquisition of data of dependable quality and to furnish aid to the uninformed. Eleven organizations are working toward this end. May I then suggest in the study of bone tumors that the various committees give thought to the state associations as the elementary unit through which data may be collected and information disseminated. The national society committeemen naturally become liaison members of their state committee. These data through the subcommittee on bone tumors can then be made available to the committees of the various specialized societies for analysis and evaluation. The ultimate deductions

and authoritative opinions naturally would be anticipated from the committee of the Registry of Bone Sarcoma.

Orthopedic surgeons are by their conservation and reconstruction work drawn closely into the problem of bone tumors. Anticipation of future function is a factor of major moment. The functional demand on the affected individual and the site of the lesion will

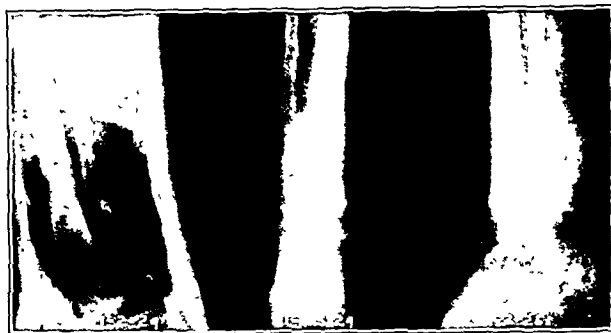


Fig. 3 (case 1).—Antecedent infectious pathologic changes in contiguous bone.

be determining elements in the choice of therapy. The character of the lesion demands careful determination. Life is more essential than a limb; conservation of both may be possible.

Decisions as to the management of a particular problem are more frequently rational when viewed from various angles. Accuracy in diagnosis and effectiveness in therapy are directly in proportion to the carefulness, experience and judgment of the combined consulting group, clinician, radiologist and pathologist. On a debatable diagnosis the clinical features are not to be outweighed by the microscopic interpretation. The clinical and radiologic judgment of gross pathology in vivo must be tied into the interpretation of the microscopic management. It is not possible for the pathologist to pass judgment in all cases. In a review of some of the atypical and unclassified cases of the registry it is interesting to note the lack of authoritative assertiveness in the opinion of pathologists most



Fig. 4 (case 1).—Antecedent infectious pathologic changes in contiguous bone.

experienced. Says Dr. Ewing (Biopsy in Bone Sarcoma): "The biopsy should be the last step in the diagnosis of bone sarcoma" and implies properly the attempt of hurried or uninformed clinicians to cover their deficiencies by resort to early biopsy and so to place the major responsibility on the pathologist.

The recognition and treatment of the benign bone lesion offers few difficulties to the surgeon of average discernment and skill. The malignant bone lesion with

its predictable outcome demands from the patient and the physician prolonged courage and fortitude. The intermediate or suspicious bone lesion demands a keen judgment, close study of all available facts in this and similar lesions, capacity to act without haste and ability to consult intelligently with men of greater and even less experience.



Figure 7.

Fig. 7 (case 3).—Antecedent pathologic changes in soft parts; metastasis in bone secondary to adenocarcinoma of breast which was quiescent for six years. Appearance, Nov. 15, 1933. Multiple metastatic lesions. Death one year after minor trauma.



Figure 8.

Fig. 8.—Same case as in figure 7, Jan. 13, 1934.

#### RULES OF PROCEDURE FOR BONE LESIONS

By JOSEPH COLT BLOODGOOD, M.D.

(Rearranged with permission and apology.)

1. Complete
  - (a) History, personal and family
  - (b) Physical examination, local and general
  - (c) X-ray and clinical laboratory examinations
2. X-ray Study
  - (a) Of all traumatized bone
  - (b) Of single lesion, repeated and comparative in various planes
  - (c) Of corresponding normal segment
  - (d) Of other bones for multiple lesions
  - (e) Of chest and pelvis for early metastasis; also lateral of skull, teeth
  - (f) Therapy early, if necessary as a time killer; if suspicion of malignant condition (200 kv. machine)
  - (g) Therapy discontinued if beneficial results are not evident in two to three weeks
3. Clinical Laboratory Study
  - (a) Temperature at regular intervals over adequate period
  - (b) Urine, especially for Bence-Jones bodies and excess calcium content
  - (c) Blood counts
  - (d) Blood Wassermann reaction
  - (e) Blood chemistry to include sugar, serum calcium and phosphorus and phosphatase
  - (f) Metabolism studies
4. Bone Tumor Biopsy
  - (a) Rarely, if ever, an emergency
  - (b) Not permissible where facilities for preparation of material are not available
  - (c) Desirable to have pathologist and radiologist in attendance
  - (d) Technic; aspiration (Martin and Ellis) (Stewart); excision of adequate material
  - (e) In dubious cases, opinions from consultants of wide experience (Registry of Bone Sarcoma)
5. Attitude of Physician Toward Patient
  - (a) Artistic approach in methods of obtaining opportunity for adequate study
  - (b) Avoid expression of opinions until definite plan of action can be determined
  - (c) Avoid mention of surgery or possible amputations until adequate mental preparation of the patient is accomplished
  - (d) Avoid activity of patient by rest in bed; or splints and sling for upper extremity and crutches for lower

(Reprint from "Bone Tumors," S. M. A.)

From the clinical standpoint there are bone tumors indubitably benign and others as certainly malignant. Between these groups is a great array of bone growths

whose present activity is not discernible and whose future conduct is hardly predictable. They are suspicious citizens of the community. They may remain as reformed incarcerated individuals or, on undue stimulation, demonstrate life or limb-taking characteristics. It is this borderline group from which the more valuable information is to be derived by prolonged and intensive study. Deductions cannot be properly drawn except from large groups of similar cases.

#### CONCLUSION

1. A plan of action for more adequate study of bone tumors has been offered. This plan is applicable to those states not possessing a generous scientific foundation and afflicted by agrarian legislators not sensitive to the beneficial effect of a generously supported state university.

2. Various angles of clinical and pathologic evaluation have been presented in the borderline group of bone tumors.

3. From a group of about 125 personally observed bone tumors, eleven case summaries have been selected. In these, prolonged observation has proved the diagnosis in some. In others, the diagnosis remains debatable.

#### SUMMARY OF CASES

The following cases exemplify certain difficulties in correlation of observations and deductions of opinion on therapy. Some of these difficulties are clarified by observations carried out over long periods.

CASE 1.—Antecedent infectious pathologic changes in contiguous bone.

K. G., a girl, aged 14 years, referred by Drs. Davis and Conlin, had suffered an attack of acute osteomyelitis in the tibia in 1924 which necessitated three operations. The disease became inactive. There was for four years a minor sinus with intermittent discharge and occasional extrusion of sequestrums. This was carefully followed in x-ray examinations. There were

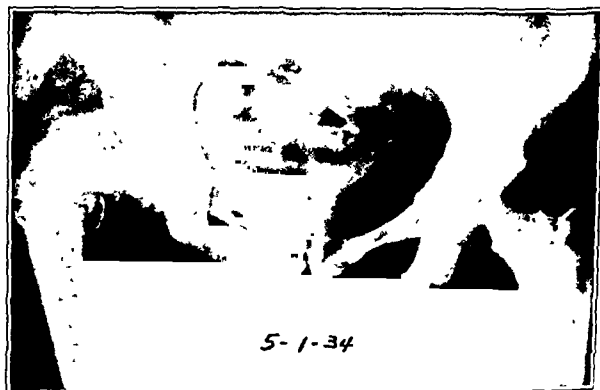


Fig. 9.—Same case as in figure 7, May 1, 1934.

two minor contusions to the fibula in 1928, followed by slight increased activity of the disease process in the tibia and fibula—a process interpreted as similar to that in the tibia. The duration was for only a few days, the condition quieting after slight discharge from the old tibial sinus. Three months later there were increased signs in the fibula. Incision was made and drainage instituted, the tissue being reported inflammatory. She was first seen by us Nov. 9, 1928, and two months later

there was another flare up with signs of pleuritic irritation. Two weeks later (Jan. 24, 1929) there was clinical suspicion of new growth or infectious granuloma. February 18 this was clinically diagnosed as a type of sarcoma with pulmonary metastases, and yet the microscopic report showed "chronic inflammatory tissue." With radium therapy, marked and rapid improvement in the condition of both the leg and the chest was noted. The diagnosis then seemed established as Ewing's sarcoma. The patient's improvement permitted considerable activity for five months. In July 1929 the opinion of a consulting group in a major center would not confirm the diagnosis—they regarded the whole picture as infectious. In September there was a recurrence of symptoms with general metastases, both visceral and skeletal, which became radio-resistant. Death occurred Jan. 2, 1930, five and one-half years after the onset of osteomyelitis in the tibia and one and one-third years after the onset of Ewing's tumor in the fibula. The diagnosis was confirmed by the study of a section from a lymph gland post mortem.

CASE 2.—*Antecedent pathologic changes in involved bone.*

S. H., a woman, aged 60, referred by Dr. Synhorst, had a thyroidectomy performed in 1916. In 1929 she complained of low back pain with sciatica on the left. In August 1932 she noticed a mass in the left thigh, which was not especially painful. There was slight loss of weight, weight now being 137 pounds (62 Kg.). A limp developed. November 14 there was enlargement of the left thigh with fusiform swelling and no local heat, the enlargement being firm and tender. Roentgenograms showed extensive changes throughout the left femur, cystic areas of bone lysis with cortical destruction and enlargement of the shaft. The right femur showed cortical thickening and irregular density, patchy in character. There were moth-eaten areas in the pelvis. All clinical tests were negative. The blood calcium was a high normal (13 mg. per hundred cubic centimeters).

The working diagnosis was atypical Paget's disease with secondary new growth.

Nov. 18, 1932, there was generous exposure of the femur. Over the antero-external aspect there was a fusiform lobulated mass, which was firm. The bone was of variable density with cystic areas of destruction through the cortex and not very vascular. In the proximal third there was a mass of desiccated saponified material with calcareous or sandlike contents. After medullary decompression, muscle tissue was implanted into the medullary cavity. The wound was closed, a plaster spica was applied, and this was followed by protection with a walking caliper (J. & S.). The microscopic study showed hyperplasia of cartilage and bone with irregular arrangement, except where there was proliferation of loose fibrous connective tissue with strands of spindle cells scattered throughout. Our opinion was that this was an osteochondrosarcoma.

In March 1933 the patient was generally better, though she complained of some pain in the thigh. Increased changes were revealed on x-ray examinations.

Recurrence of the soft part of the tumor was noted May 14. Roentgen therapy was started (5,715 roentgens from May 5 to November 13) without appreciable benefit, unless it was to decrease the rate of growth. Disarticulation at the hip was recommended.

Dec. 12, 1933, a pathologic fracture occurred in the middle third of the femur. There was no evidence of metastases to the chest and the patient's general condition was very good. The middle third of the thigh increased to a circumference of 27 inches.

December 13, disarticulation at the hip joint was performed; convalescence was uneventful, and the patient went home in twenty-eight days.

In May 1935 she was in excellent condition with no evidence of local or general recurrence and was moving about actively on crutches.

CASE 3.—*Antecedent pathologic changes in soft parts; metastasis in bone secondary to adenocarcinoma of breast, quiescent six years.*

M. S., a woman, aged 47, had a radical breast resection in 1927 on account of a small tumor proved to be adenocarcinoma. The patient was in excellent health until September 1933, when there was a minor twisting injury to the right lower extremity, associated with a fall in which she struck the knee but did not

strike the right hip region. Following this, soreness was noted in the right hip and minor disability continued. She reported to us, Oct. 26, 1933, when tenderness was shown over the quadriceps extensor and fascia lata in its proximal third. Rest and protection by spica bandage gave no relief. Roentgenograms of November 15 showed cortical thickening in the shaft of the femur with decreased density in the greater trochanter and femoral neck. Pain and disability continued. Jan. 13, 1934, x-ray study showed a definite lesion, destructive in character, in the greater trochanter and subcervical region; also a suggestive lesion in the right ilium. A definite diagnosis was made of metastatic carcinoma, and roentgen therapy was instituted for symptomatic relief, but the lesion became radio-resistant after ninety days (3,465 roentgens from January 16 to May 11).

There was a pathologic fracture of the neck of the right femur, April 25, followed by intrathoracic metastases demonstrable August 13. Intracranial metastasis was noted, August 25, and death followed, Sept. 29, 1934. This case had been reported in a group of "five year cures" of cancer of the breast.

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## PASSIVE VASCULAR EXERCISE

### OBSERVATIONS ON ITS VALUE IN THE TREATMENT OF PERIPHERAL VASCULAR DISEASES

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AND

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Amputation may be the final outcome of serious peripheral vascular disease, but a large variety of conservative methods have been tried in an effort to prevent or delay radical surgery. A review of the literature shows that there has been considerable premature enthusiasm about many of the methods when introduced; some, however, have been proved of value and are retained to the present day.

Fever therapy, as by foreign protein injection, has been reported to give very good results; Barker<sup>1</sup> treated 150 cases of thrombo-angiitis obliterans by the injection of typhoid vaccine and noted marked improvement in 49 per cent of the cases, while slight improvement was said to have occurred in 27 per cent. Sodium chloride solutions given intravenously in large amounts have been used rather extensively; Samuels<sup>2</sup> feels that this treatment plus rest and cleanliness afford the best opportunities for the patient suffering from these vascular diseases. Allen<sup>3</sup> emphasized the beneficial effects to be had from using the foot exercises first described by Buerger. Vasodilator drugs have been used for a long time, and Denk<sup>4</sup> and Allen<sup>5</sup> have reported good results from the use of papaverine hydrochloride given intravenously for its vasodilator effects in cases of embolism of an extremity. This therapy is based on the theory that there is a reflex constriction of the collateral channels, but this lacks adequate proof. Of the foregoing methods of treatment, the two of definitely established value are rest and cleanliness.

Passive vascular exercise has recently been added to the armamentarium by Herrmann and Reid<sup>6</sup> and by

From the Department of Surgery of the University of Chicago.

1. Barker, N. W.: Results of Treatment of Thrombo-Angiitis Obliterans by Foreign Protein. *J. A. M. A.* 97:841-843 (Sept. 19) 1931.

2. Samuels, S. S.: Gangrene Due to Thrombo-Angiitis Obliterans. *J. A. M. A.* 102:436-442 (Feb. 10) 1934.

3. Allen, A. W.: *Ann. Surg.* 92:931, 1930.

4. Denk, Wolfgang: München, med. Wchnschr. 81:437-439 (March 23) 1934.

5. Allen, E. V., and MacLean, A. R.: Proc. Staff Meet., Mayo Clin. 10:216-220 (April 3) 1935.

6. Herrmann, L. G., and Reid, M. R.: *Ann. Surg.* 100:750-760 (Oct.) 1934.

Landis and Gibbon.<sup>7</sup> These workers have reported that for a period of hours the skin temperature of an extremity can be elevated by treatment in the passive vascular exercise unit. Herrmann and Reid<sup>8</sup> in seventy-five unselected cases of "arteriosclerosis obliterans" reported the results given in table 1.

In another report<sup>9</sup> the same authors discuss the results of fifty-one cases presenting organic vascular disease and state that "forty-four patients (86.27 per cent) were greatly benefited by this form of therapy," while seven patients showed no relief of pain. Time had not been sufficient to state permanent results when this report was made.

TABLE 1.—Results in Seventy-Five Cases of "Arteriosclerosis Obliterans" with Passive Vascular Exercise Unit

10 cases showing "predominant involvement of major arterial pathways"	100% "complete relief"
46 cases showing "predominant involvement of secondary arterial pathways"	43% "completely relieved of major symptoms" 48% "greatly improved"
19 cases showing involvement mainly of "arterioles of the feet"	16% relieved 42% less pain 42% no change

In 1935 Landis and Hitgrot<sup>9</sup> reported their observations on thirty patients with arterial vascular disease treated by a similar method of suction and pressure. The patients treated were grouped into three classes as having (1) diabetes, (2) thrombo-angiitis obliterans or (3) arteriosclerosis. The results were quite favorable and a summary of the observations is given in table 2. They reported especially the relief of rest pain during the period of treatment but did not report observations as to the permanent effects on this type of pain. Lesions involving definite gangrene and large sloughs gave little or no evidence of change. "Intermittent claudication became milder and exercise tolerance was slightly but definitely increased."

Shipley and Yeager<sup>10</sup> reported almost uniformly good results in thirteen cases, but this small series included six different maladies.

De Takáts<sup>11</sup> in 1934 reported twenty cases treated with a positive and negative pressure machine in four of which incomplete treatment had been given, and the results in the remaining cases appeared unconvincing.

Allen and Brown<sup>12</sup> recently reported that in eleven cases the pain of "ischemic neuritis" was completely relieved by passive vascular exercise in two instances, was partially relieved in four cases and showed no permanent change in three, while two individuals became worse during the treatment. In twelve cases of thrombo-angiitis obliterans which exhibited "trophic changes" definite improvement was observed in four, while the remainder either showed no change or became worse during the course of the treatment. In seven cases with similar lesions produced by arteriosclerosis, improvement was noted in five instances. Many of these patients, although their cases were reported chiefly because of the passive vascular exercise treatment, also received other well recognized forms of therapy. All

were hospitalized, thus enforcing a large amount of rest. Surgical care was given the extremities when indicated, and in many cases fever therapy and intravenous sodium chloride were also used.

Thus it is apparent that even with a combination of all the best known methods the results obtained leave much to be desired. Also the difficulty of evaluating passive vascular exercise with the other methods is obviously very real until a much larger number of cases is studied and until longer periods of observation have been made. The present series of cases, while rather small in number, is reported to aid in further evaluating the results derived from this form of therapy.

REPORT OF CASES

*Selection of Cases and Examination of Patients.*—The patients treated were referred from various services in the hospital; however, when treatment was begun most of them were again examined, and their subsequent course was followed by one of us. We were chiefly interested in studying results obtained from passive vascular exercise treatment in arteriosclerosis, thrombo-angiitis obliterans and embolism.

In all cases an attempt was made to take a careful vascular history. The examination consisted of the routine physical examination and laboratory work (blood counts, urinalysis, Wassermann test) with especial attention to the vascular system and extremities. In a few instances vasomotor indexes were determined and in a few others skin temperature determinations were made, but in most cases only the usual clinical methods were used.

*Method of Treatment.*—The passive vascular exercise unit devised by Herrmann and Reid was employed. The negative pressures used varied from -60 to -80 mm. of mercury, while the positive pressure was +20 mm. of mercury. The machine was run at about 2 cycles per minute.

During the first few months a rubber cuff as described by Herrmann and Reid was used at the top of the boot. There was difficulty in fitting the rubber cuffs so that they would be air tight and yet would not obstruct the return of venous blood. Later special cuffs designed by Benson<sup>13</sup> were used. These were

TABLE 2.—Summary of Results

	Relief of Symptoms and Signs		
	None	Fair	Good
Diabetes.....	3	1	10
Thrombo-angiitis obliterans.....	2	3	7
Arteriosclerosis.....	1		3

available in various sizes to fit the individual extremity and consisted of a semirigid truncated cone, which was attached to the boot at its larger end and to the skin of the leg at its smaller end. An air-tight junction with the skin was obtained by suction applied to a circular groove on the inner surface of the cuff, petrolatum being used as a seal. No harmful effects to the skin have been observed from this method and we believe that it is a definite improvement over the cuff formerly used.

Most of the patients treated were hospitalized for at least a portion of the time. All patients receiving passive vascular exercise treatment were given careful instructions about care of the feet and abstinence from

13 Benson, Simon: Personal communication to the authors.

7. Landis, E. M., and Gibbon, J. H.: J Clin. Investigation 12: 925-961 (Sept.) 1933.  
8. Herrmann, L. G., and Reid, M. R.: Passive Vascular Exercise, Arch. Surg. 29: 697-704 (Nov.) 1934.  
9. Landis, E. M., and Hitgrot, L. H.: Am. J. M. Sc. 189: 305-325 (March) 1935.  
10. Shipley, A. M., and Yeager, G. G.: Surg. Gynec. & Obst. 59: 480-485 (Sept.) 1934.  
11. de Takáts, Geza: Obliterative Vascular Disease, J. A. M. A. 105: 1920-1924 (Dec. 22) 1934.  
12. Allen, E. V., and Brown, G. E.: Intermittent Pressure and Suction, J. A. M. A. 105: 2029-2034 (Dec. 21) 1935.

tobacco, and were advised to carry out Buerger's foot exercises three times daily. A few of the patients also had other methods of treatment; one (patient 20) received a series of fever treatments and intravenous saline injections; another (patient 5) had a lumbar ganglionectomy before positive and negative pressure was instituted, and two others (patients 22 and 34, with embolism) were given papaverine hydrochloride. Improvement was evaluated approximately two months after completion of the treatment.

*Arteriosclerosis.*—Twelve cases diagnosed "arteriosclerotic obliterative disease" were given treatment in amounts varying from 17 to 111 hours (table 3).

plained of cramps in the dorsum of the right foot after walking and who had noticed a bluish discoloration of the right fourth and fifth toes for three weeks. The skin was moist and slightly macerated at the base of these toes. This patient improved rapidly, the color of the toes returned to normal, and the skin healed. The cramps in the foot almost entirely disappeared. Undoubtedly an important factor in the improvement of the foot was the better hygienic care that it received, since before treatment was begun this measure had been almost entirely neglected.

The remainder of this group showed no change whatever after receiving the treatment.

TABLE 3—Course of Vascular Disease in Twenty-Three Cases Treated with Passive Vascular Exercise Unit

Case	Age	Amount of Treatment		Symptoms and Signs Before Treatment	Comment on Condition After Treatment
		Total Hours	Days		
Arteriosclerosis					
1	74	48	49	I C* at 2 blocks; paresthesia, foot and calf, 2 yrs; no pulse in feet; feet cool and cyanotic	Can walk 3¼ blocks; able to work standing up; less "needles and pins"; no objective changes
2	66	69	46	I C* slight, rest pain in feet; weak pulse in feet; diabetic	No definite change noted
3	37	111	30	I C* at 1 block, dorsum of foot "feels frozen"; night rest pain; no pulse in feet	I C* at 2½ blocks, but improvement not permanent; night discomfort persisted
4	71	17	7	Pain and swelling in right foot for 6 wks; foot cyanotic, cool, swollen; no pulse in foot	No change; pain persisted even during treatment
5	61	77	38	I C* at 1 block; feet cool; no pulse in foot	Can walk 2½ blocks farther
6	68	82	20	Ulcer on left foot; rest pain present; foot cool, no pulse	Possibly less rest pain; no change in ulcer
7	70	108	27	I C* at 1-2 blocks, 2 yrs; night rest pain; feet cool, cyanotic, no pulse	Less rest pain; subjectively better; objectively little or no change
8	50	18½	10	Pain in right foot, 3 mos; discoloration of right 4th and 5th toes, pulse present in feet	Less pain; color of skin improved; skin ulceration healed
9	66	44	30	I C* at ½ block; paresthesia present; no pulse in feet; cyanosis of foot	Less paresthesia; can walk 6 blocks instead of ½
10	55	56	30	Rest pain in both feet; ulcer, left heel; I C* at 1 block	Ulcer improved as result of bed rest; no other change
11	62	42	10	Rest pain in right foot, 3 mos; discoloration of right 4th and 5th toes; no pulse in foot or in popliteal artery	No relief
12	72	20	10	Diabetic; 4th toes previously amputated; wound slow in healing	Condition unchanged; foot amputated later
Thrombo Angitis Obliterans					
13	44	42½	95	I C* at 2 blocks; paresthesia for 2 yrs; pulse present in feet	Can walk 6 blocks. Less paresthesia; improvement psychic?
14	53	46	90	I C* at 2 blocks; cold right foot; small ulcer on foot, no pulse	Less pain for 2 mos after which symptoms as before; amputation
15	44	45	39	I C* at 3 blocks or on standing 10 minutes; pulse present	No change
16	43	17½	20	I C* at 4 blocks; paresthesia present; left foot cold, but pulse present	No change
17	50	24	20	I C* at 1 block; rest pain in foot; gangrene of 2 toes, no pulse in foot	Less rest pain; can walk 3 blocks without pain; no change in gangrene
18	39	7½	14	I C* at ½ block; no dorsalis pedis pulse; poor post tibial pulse	No change
19	43	65	120	Painful gangrenous toe on right foot; I C* at 3 blocks; no pulse in foot	No change
20	53	114	80	I C* present; diabetic; paresthesia present; pulse present	Temporary improvement only
Embolism of Lower Extremity					
21	48	24	2	Rheumatic heart disease; sudden pain and pallor of right leg to 2 inches above knee	No change in extremity; died of cardiac failure 3 days later
22	51	42	8	Embolus right femoral 11 hrs before admission; pallor and no pulse below mid thigh	Recovered; received only 4 hrs of passive vascular exercise 1st and 2d days; papaverine hydrochloride also given but no definite changes noted after its administration
23	38	100	13	Embolus left foot, extended to popliteal; pallor, coldness and pain in foot	Intensively treated; gangrene; died 17 days after embolus

\* Intermittent claudication

Five patients apparently were slightly benefited, as they were able to walk farther without claudication and also complained of less numbness and tingling. These symptoms, however, did not disappear.

In patient 10 an ulcer on the heel of the left foot healed during the treatment. The bed rest was undoubtedly an important factor in causing the ulcer to heal, since it had previously been impossible to make the patient keep off the foot. The symptoms of intermittent claudication, rest pain in the feet, and the numbness and tingling were not influenced by the therapy, although a total of fifty-six hours was administered.

The only patient who showed a very definite objective change was a man of 50 (patient 8) who com-

*Thrombo-Angitis Obliterans.*—Eight cases were treated and in two there was improvement, as evidenced by the ability to walk from two to four blocks farther without claudication and by less numbness and tingling in the feet.

Six cases showed no change. In no case of this group was ulceration of the foot or gangrene of a toe benefited by the therapy.

*Embolism.*—In one case a femoral embolus occurred in a decompensated cardiac patient (21 in table 3). Twenty-four hours of treatment was given during the next two days without effecting any noticeable change in the extremity. Three days after the accident the patient died of cardiac failure.

Another patient (22 in table 3) was brought into the hospital eleven hours after an embolus lodged in the right femoral artery. Pallor, coldness and absence of pulse were noted to a point 2 inches (5 cm.) above the knee. This patient received about four hours of treatment at various intervals during the afternoon of admission and about the same amount the next day. The patient also received papaverine hydrochloride. Within twenty-four hours the color of the extremity had largely returned and the dorsalis pedis pulse could again be felt. It is difficult to believe that all the improvement was due to the passive vascular exercise treatment, since it was used for only four hours the day of admission and only four hours on the following day.

The third case (23 in table 3), a woman, aged 38, with rheumatic heart disease, was seen by one of us thirty-six hours after she received an embolus to the left foot. At this time the foot was slightly cooler than the right and the patient experienced a feeling of numbness. The color of the foot was fairly good, so that it was felt that the circulation was adequate. Heat was applied by means of an electric light cradle. Twelve hours later the toes and dorsum of the foot were definitely cyanotic and above this was an area of hyperemia. At this time also the popliteal pulse was found to be absent for the first time. Positive and negative pressure treatment was begun and continued intermittently for 100 hours over a thirteen-day period. Five successive doses of papaverine hydrochloride were also given (two doses intravenously). For several days it was impossible to tell whether the foot would survive or not. After nine days of treatment it was fairly certain that it would be necessary to amputate the foot. The patient died seventeen days after onset, supposedly from a cerebral embolus.

#### SUMMARY AND CONCLUSIONS

Twenty-three cases of peripheral vascular disease were treated by means of passive vascular exercise. Twelve cases were diagnosed arteriosclerosis; five of these were subjectively somewhat improved but there was little or no permanent change in the objective manifestations. One patient's complaints were relieved and the appearance of the foot definitely improved, although the fact that this patient was given only eighteen and one-half hours of treatment makes it doubtful whether the passive vascular exercise was responsible for the result. Six cases showed no change.

There were eight cases of thrombo-angiitis obliterans; of these two showed a slight decrease in the intermittent claudication and six showed no change.

Three patients with embolism were treated. Two died as a result of the heart disease that had given rise to the embolus. The third recovered but it is doubtful whether or not this was due to either the positive and negative pressure or to the papaverine treatments that were administered.

Many of these patients felt improved during the course of the treatment but reported no permanent beneficial results when questioned two or more months later. This is evidence of the lack of permanent benefit from the treatment and may indicate a considerable psychologic factor.

In this series of cases passive vascular exercise treatment did little good, and it was difficult to say whether the beneficial results that followed were to be attributed to it or to the other measures that were concurrently employed.

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## CULTURE OF HUMAN BONE MARROW

### PRELIMINARY REPORT

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AND

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In this report we describe briefly a method for the culture of human marrow in quantities permitting hematologic and metabolic studies. We also outline some of the problems under investigation by this method. The apparatus supplies a lung, kidney and circulation for the marrow, as it provides for the control of oxygen and carbon dioxide tension, of  $p_{H_2}$ , and of the composition of the medium; for elimination of waste products, for supply of nutrients, for removal of part or all of the culture for study, and for maintenance of sterility.

The most important feature of the apparatus is a semipermeable membrane, separating the culture from the main volume of medium. This membrane allows nutrient materials from the surrounding medium to diffuse into the culture as needed and allows waste products to diffuse out as they accumulate. Because of this equilibrium, analysis of the outflowing medium gives a good indication of conditions in the culture and of its metabolic activity.

The development of a simple technic<sup>1</sup> for obtaining human sternal marrow during life made available material suitable for culture in quantity. We have been unable to find references to any previous culture of human marrow or to cultures of animal marrow in quantities sufficient to permit hematologic or metabolic studies.

The construction and assembling of the apparatus<sup>2</sup> is indicated in figure 1:

The glass is all Pyrex except for parts *A* and *I*. The apparatus is sterilized with nascent chlorine, which is washed out first with an air stream and then with sterile medium<sup>3</sup> from the reservoir (*N*<sub>2</sub>) until the medium withdrawn from the outlets *V*<sub>1</sub> to *V*<sub>6</sub>, shows no alteration in  $p_{H_2}$ . The temperature of the thermostatically controlled, constant level water bath<sup>4</sup> (*A*) is adjusted to 37.5 C. The carbon dioxide, nitrogen and air are mixed in a large bottle and, by displacement with water, the gas flow is started through *R*<sub>1</sub> or *S*<sub>1</sub>. Fresh medium is introduced from *N*<sub>2</sub> by opening the pinch cocks (*T*<sub>15</sub> and *T*<sub>16</sub>) into the outside chamber (*O*) until the level reaches *M*<sub>5</sub> and spills over into the marrow culture chamber (*E*). Then the level of medium is adjusted in *O* to the desired level by opening *T*<sub>12</sub>, *T*<sub>18</sub> and *T*<sub>17</sub>. The medium in *E* is aspirated up into the calibrated measuring chamber (*C*) by the bulb (*X*) and *T*<sub>1</sub> is closed. Any excess above 3 or 4 cc. is withdrawn through outlet *V*<sub>2</sub> into a sterile tube, under aseptic technic.<sup>5</sup>

A sternal puncture<sup>1</sup> is performed and at once 1 cc. of the marrow is introduced through intake *B*, aseptic technic being

Aided by a grant from Eli Lilly and Company, Indianapolis.  
From the Department of Medicine, University of Oregon Medical School.

1. Young, R. H., and Osgood, E. E.: Sternal Marrow Aspirated During Life, *Arch. Int. Med.* 55: 186 (Feb.) 1935.

2. The semipermeable membranes we use are made by drying on the inside of a test tube a 4 per cent solution of parlodion in 25 per cent absolute alcohol and 75 per cent ether. The membranes are stored in sterile distilled water and are tested for permeability to dextrose and ability to retain serum proteins.

3. The formula for our stock medium is as follows: 9.0 Gm. of sodium chloride, 0.25 Gm. of calcium chloride, 1.5 Gm. of dextrose, 0.210 Gm. of potassium acid phosphate and 0.1 Gm. of potassium chloride dissolved in distilled water. Add to this after sterilization 20 cc. of sterile, normal sodium bicarbonate solution and dilute to 1 liter with sterile water. It should have an alkali reserve of about 45. To this may be added any ingredients the effects of which it is desired to study. The quantity of bicarbonate and dextrose may be varied, but the carbon dioxide tension must also be varied to obtain the proper  $p_{H_2}$ .

4. The water bath we use, complete with the Osgood thermostat and heating element (not shown in the diagram) is obtainable from A. H. Osgood, 6023 N. E. Hoyt Street, Portland, Ore.

5. E. E. West, professor of biochemistry, University of Oregon Medical School, gave many helpful suggestions and assisted in the glass blowing.



used. This marrow is rinsed down into *C* with the sterile medium removed through *V*<sub>2</sub> and, by opening *T*<sub>1</sub> and *T*<sub>2</sub>, the marrow is forced back inside the semipermeable membrane *F*. With a syringe and needle, sterile serum or other special nutrient material is introduced into chamber *H* through inlet *G*. After the cap is replaced on *G*, by means of bulb *W*<sub>1</sub>, air is forced through cotton *Y*<sub>2</sub> into *H* until the serum has passed down through *I* into the semipermeable membrane *J* and has passed back up through *K* to a level just below its top. If necessary, more mercury is added to side arm *L*<sub>2</sub> of manometer *L*<sub>1</sub> to balance the colloid osmotic pressure of the serum.

The further operation of the method is then as follows: Any desired gas mixture may be forced through *R*<sub>1</sub>, trap *U*<sub>1</sub>, non-absorbent cotton filter *Y*<sub>1</sub>, tube *R*<sub>2</sub>, chamber *C* and *D* to bubble through marrow culture in chamber *E*, passing out through tube *R*<sub>3</sub>, trap *U*<sub>3</sub>, and bubbling through Marriott's solution in *R*<sub>4</sub> and *R*<sub>5</sub> to give a continuous record of the carbon dioxide tension. If desired, the gas mixture may be run through *S*<sub>1</sub>, *S*<sub>2</sub> and *O*, passing out through *M*<sub>2</sub>, *R*<sub>5</sub>, and so on. Regulation of the rate of gas flow may be adjusted by screw compressor clamps *T*<sub>2</sub> and *T*<sub>7</sub>. Outflowing gas may be removed as it flows out of side arm on *R*<sub>5</sub> for analysis. Medium from *N*<sub>2</sub> may be removed through *V*<sub>2</sub> at any time for analysis and may be allowed to flow steadily or intermittently through chamber *O* by adjustment of screw compressor clamp *T*<sub>11</sub>. By releasing *T*<sub>11</sub> and closing *T*<sub>10</sub>, it may be collected in chamber *N*<sub>4</sub> and mixed with any desired additional ingredients and then permitted to flow into chamber *O*. The level of fluid in chamber *O* may be regulated by the raising or lowering of the reservoir *P*<sub>2</sub> and adjustment of stop cocks *T*<sub>12</sub> and *T*<sub>13</sub>. The outflowing medium may be withdrawn for analysis through *V*<sub>4</sub> at any time. It may be collected temporarily in *P*<sub>3</sub> by closing pinch cock *T*<sub>11</sub> and its *p*<sub>H</sub> determined by adding alcoholic neutral red solution from reservoir *P*<sub>4</sub> and comparing with standards. It may be allowed to flow continuously into calibrated reservoir *P*<sub>5</sub> and the total collection over a period of time removed for analysis through *V*<sub>5</sub> by closing *T*<sub>11</sub> and introducing filtered air under pressure by compressing *H*<sub>2</sub>. The used serum mixture may be withdrawn through *V*<sub>1</sub> at any time for analysis. The marrow culture itself may be reaspirated into *C* for measurement or withdrawal of a sample at any time by closing *T*<sub>2</sub>, opening *T*<sub>1</sub>, compressing *X*, closing *T*<sub>3</sub>, releasing *X*, closing *T*<sub>4</sub>, reopening *T*<sub>2</sub>, and withdrawing the volume of mar-

row desired through *V*<sub>2</sub>. The remaining marrow is then reintroduced into the culture chamber *E* by closing *T*<sub>2</sub> and opening *T*<sub>4</sub>.

On the marrow culture withdrawn we have been doing supravital stains, hemoglobin estimations, red cell counts, total nucleated cell counts, differential cell counts, reticulocyte counts, peroxidase stains and chemical analyses. The material is suitable for any hematologic or chemical procedure. With this method it has been possible not only to observe motile, living cells, capable of phagocytosing bacteria (fig. 2) many

days after the culture was first started, but also to determine the actual number of each type of cell present, any changes in number that may occur, and the effect of any change in oxygen or carbon dioxide tension, temperature, *p*<sub>H</sub> or medium on the rate of mitosis and number of different cell types. It is also possible to run complete metabolic experiments. Details of our results will be reported at a later date.

The following outline gives some of the problems that offer promise of solution by this method:

1. Determination of the optimal temperature, *p*<sub>H</sub>, oxygen and carbon dioxide tension, and composition of medium for multiplication of each type of cell.
2. Determination of the optimal conditions for maturation of each type of cell.
3. Development of synthetic mediums from chemically pure amino acids, hormones, vitamins, glutathione or other substances and of practical, protein-free mediums by ultrafiltration of serum, tissue juices or proteolytic digests.
4. Development of improvements in the apparatus and of simplified apparatus for multiple, short experiments.
5. Isolation of each type of cell in pure culture and determination of the origin of each cell type and of the specific stimuli that cause multiplication, maturation or metaplasia.
6. Determination of the total metabolism of mixed marrow and of each type of cell in pure culture.

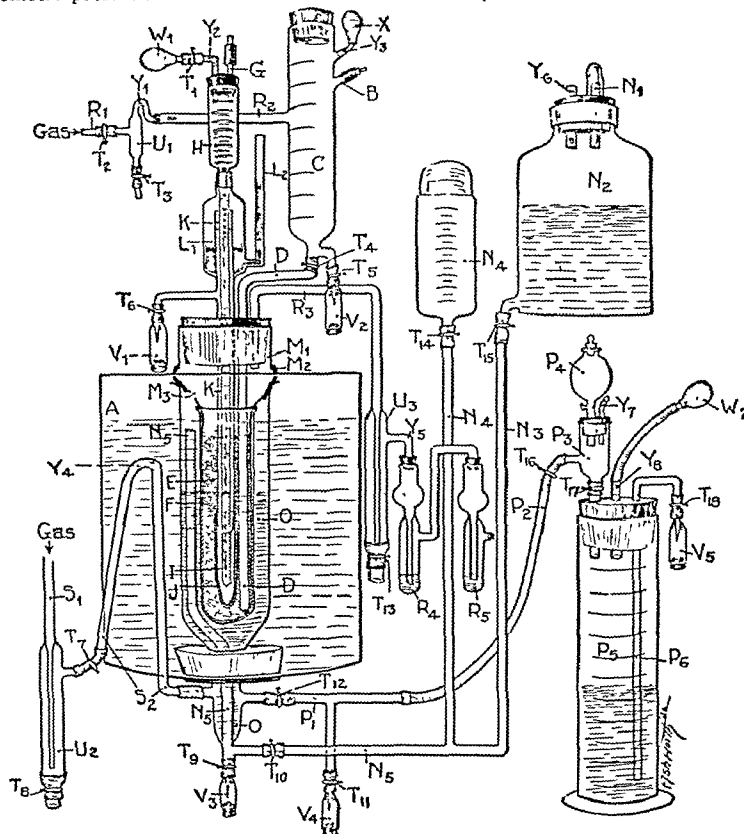


Fig. 1.—Diagram of marrow culture apparatus: *A*, thermostatically controlled glass water bath. *B*, inlet for introduction of marrow. *C*, calibrated chamber for measuring volume of marrow culture. *D*, tube leading from *C* into *E*. *E*, marrow culture chamber. *F*, semipermeable membrane containing marrow culture. *G*, inlet for introduction of serum or special nutrients. *H*, calibrated reservoir for serum or nutrients. *I*, small tube leading from *H* to interior of semipermeable membrane *J*. *J*, semipermeable membrane. *K*, larger tube for outlet of serum from *J*. *L*<sub>1</sub>, manometer for balancing colloid osmotic pressure of serum mixture in *J*. *L*<sub>2</sub>, side arm of manometer containing mercury. *M*<sub>1</sub>, glass chamber, capped with rubber stopper on to which membrane *F* is fitted. *M*<sub>2</sub>, rubber ring around shoulder of stopper onto seal to chamber *O*. *M*<sub>3</sub>, hole for exit of gas from chamber *O* and for filling of *E* with medium from *O*. *N*<sub>1</sub>, inlet tube for refilling reservoir with fresh medium. *N*<sub>2</sub>, reservoir of sterile unused medium. *N*<sub>3</sub>, tube connecting reservoir with *N*<sub>4</sub> and *N*<sub>5</sub>. *N*<sub>4</sub>, calibrated supplementary reservoir for mixing additional ingredients with stock medium and connecting tube. *N*<sub>5</sub>, tube through which medium flows from *N*<sub>3</sub> or *N*<sub>4</sub> into chamber *O*. *O*, glass chamber containing medium surrounding semipermeable membrane *F*. *P*<sub>1</sub>, outlet for withdrawal of medium from *O*. *P*<sub>2</sub>, rubber tube permitting raising or lowering of *P*<sub>2</sub> and thus regulating the fluid level in *O*. *P*<sub>3</sub>, small chamber for *p*<sub>H</sub> determination. *P*<sub>4</sub>, reservoir for alcoholic neutral red solution. *P*<sub>5</sub>, calibrated reservoir for collection of used medium. *P*<sub>6</sub>, outflow tube for withdrawal of used medium. *R*<sub>1</sub> and *R*<sub>2</sub>, inlet tubes from gas supply into marrow culture. *S*<sub>1</sub> and *S*<sub>2</sub>, inlet tubes from gas supply into chamber *O*. *T*<sub>1</sub> to *T*<sub>14</sub>, pinchcocks, stopcocks or screw compressor clamps. *U*<sub>1</sub> to *U*<sub>3</sub>, traps for collection and withdrawal of water of condensation. *V*<sub>1</sub> to *V*<sub>5</sub>, outlets for aseptic withdrawal of medium or culture; each has a fine, glass tip surrounded by sterile, nonabsorbent cotton and projecting into a protecting chamber, which is kept stoppered when not in use. *W*<sub>1</sub> and *W*<sub>2</sub>, rubber bulbs with two valves for introducing air under pressure. *X*, rubber bulb without valves for aspirating marrow into *C*. *Y*<sub>1</sub> to *Y*<sub>2</sub>, sterile, nonabsorbent cotton to filter bacteria from gas and air inlets or outlets.

7. Determination of the differences in cultural characteristics of marrow from individuals of different age and sex groups and from the different types of blood dyscrasias.

8. Development of a practical test for identification and standardization of the antipernicious anemia principle.

9. Determination of the effects of deficiencies of antipernicious anemia principle, iron, copper, vitamins, hormones and amino acids on growth and maturation of normal and pathologic marrows.

10. Determination of whether addition of carcinogenic agents will produce leukemic characteristics in marrow cultures.

11. Determination of the effects of such agents as aminopyrine, benzene, pentnucleotide, radium, roentgen rays, vaccines and bacterial filtrates or cultures.

12. Determination of whether albumin, globulin, Bence-Jones protein or antibodies are produced by marrow cells and, if so, by which cell type they are formed.

13. Determination of ingredients essential for the optimal rate of formation of hemoglobin.

14. Determination of whether marrow from an allergic patient will respond with an eosinophilia in

determine whether any of the problems outlined can be solved. However, the method appears to offer sufficient promise to justify a preliminary publication with the hope that other investigators may aid us in realizing as rapidly as possible its full potentialities.

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## LIFE EXPECTANCY IN CORONARY THROMBOSIS

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Considerable differences in opinion exist among physicians regarding the prognosis of coronary thrombosis. The prevailing attitude is pessimistic. Opinion, however, frequently is based solely on clinical impression and not on critical analysis of actual experience. Thus, the impressions that remain deal largely with the memory of fatal terminations, while frequently the ultimate course of the patients surviving the immediate attack is not determined. For comparative data, the reader is referred to hitherto published reports dealing with prognosis in coronary thrombosis.<sup>1</sup>

This study was undertaken to crystallize our own experience at the Mayo Clinic regarding the life expectancy of patients who have coronary thrombosis and to investigate various factors influencing early dissolution or recovery.

### MATERIAL

It was possible to obtain information regarding 370 patients who had coronary thrombosis and who lived from a few minutes to seventeen years. In 22 per cent the occlusive episode occurred while the patients were under observation at the Mayo Clinic, whereas the remaining patients were observed at a time varying from a few days to several years after the episode. The patients not observed in the course of acute attacks, however, presented histories that were classic in all respects for the syndrome of coronary thrombosis, and in the majority of the cases the electrocardiograms vividly

revealed the residual evidences of cardiac infarction. The critique for the inclusion of cases was rigid and all cases concerning which the least doubt existed regarding the previous occurrence of coronary thrombosis were discarded.

### AGE AND SEX INCIDENCE

Coronary thrombosis occurred outstandingly in the sixth and seventh decades of life; in this study, 71.9 per cent of the patients were in these decades. The greatest incidence occurred in the sixth decade, represented by 40 per cent of the entire group. A smaller

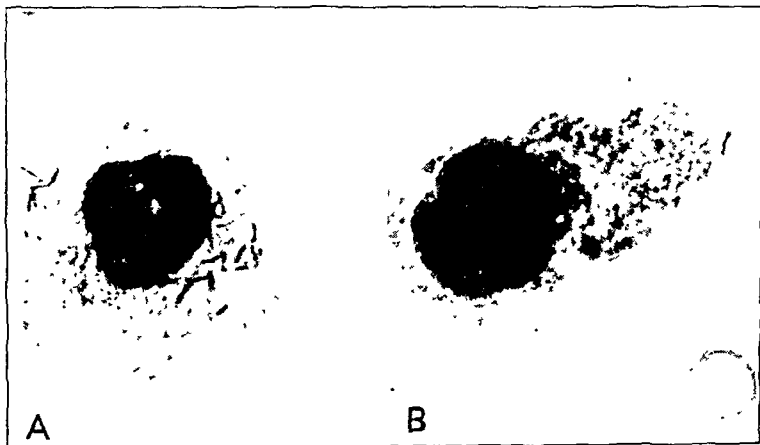


Fig. 2.—Cells from an eight day culture of marrow,  $\times 1,600$ . A, neutrophil myelocyte showing pseudopodia and the ability to phagocytize bacteria. B, eosinophil myelocyte showing pseudopodia.

the presence of the patient's serum and the specific allergen.

15. Modification of the apparatus for culture of erythrocytes in large quantities with the hope that sterile red cells of each blood group may be kept always available for instant use in transfusion.

16. Attempt to grow a pure culture of neutrophilic leukocytes in large quantities for transfusion in infections. Theoretically these might even be immunized by the addition of vaccines of the particular organism.

17. Modification of the apparatus for culture of other tissues. It seems probable that cultures of lymph nodes, spleen and similar tissues could be grown in the apparatus as it is now constructed.

18. Use of the method for culture of viruses, having living cells on the inside of the semipermeable membrane as the essential living tissue and withdrawing outside medium for continuous separation of the virus free from cells.

Investigation of these problems is in progress and the results will be reported later. Many other problems suitable for investigation will suggest themselves to any one thinking through the possibilities of the method. Of course, only actual experimentation will

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1 The data are given by

Conner, L. A., and Holt, Evelyn. The Subsequent Course and Prognosis in Coronary Thrombosis. An Analysis of 287 Cases, *Am. Heart J.* 5: 705-719 (Aug.) 1930

Cooksey, W. B.: Coronary Thrombosis Follow-Up Studies, with Especial Reference to Prognosis, *J. A. M. A.* 101: 2063-2065 (June 8) 1935.

Levine, S. A.: Coronary Thrombosis Its Various Clinical Features, *Medicine* 8: 245-418 (Sept.) 1929

Middleton, W. S.: The Prognosis and Treatment of Coronary Occlusion, *Minnesota Med.* 18: 710-721 (Nov.) 1935

White, P. D.: The Prognosis of Angina Pectoris and of Coronary Thrombosis, *J. A. M. A.* 87: 1525-1530 (Nov. 6) 1926.

White, P. D., and Bland, E. F.: A Further Report on the Prognosis of Angina Pectoris and of Coronary Thrombosis. A Study of 500 Cases of Former Condition and of 200 Cases of the Latter, *Am. Heart J.* 7: 114 (Oct.) 1931

but very significant incidence, 17 per cent, occurred in the fifth decade. The occurrence of coronary thrombosis was considerably less in the third (1.6 per cent), eighth (8.1 per cent) and ninth decades (1.4 per cent).

The predominance of the disease among males is a well recognized fact and the ratio in this study was 7:1; of the total number of patients, 324 were men and forty-six were women. The age distribution among males paralleled that of the total group, but interesting and significant variations occurred among females. These data reveal that while the percentage of females who are in the fourth, fifth and sixth decades is considerably less than that of males, the percentage of females in the seventh, eighth and ninth decades greatly outranks the percentage of males (table 1). Only 6.5 per cent of the females were less than 50 years of age.

These statistics bear out the clinical impression that coronary thrombosis occurs with relative infrequency among females but, when it occurs, affects the patients at a definitely later period of life than when it occurs among males. It is difficult to understand the reasons for the great discrepancy in incidence between the two sexes. After a critical analysis of the known factors, one is obliged to seek a possible explanation in the presumable superior biologic heritage of the female. The average survival period of females in general exceeds that of males by slightly more than three years.

#### THE RECURRENCE OF CORONARY THROMBOSIS

The patient always has a foreboding concerning the possible recurrence of coronary thrombosis and a question concerning this possibility invariably is directed to the physician by the patient or by the patient's relatives. In 297 cases (80.3 per cent), a single episode of coronary thrombosis occurred, while two attacks occurred in sixty-three cases (17 per cent). The average interval between the attacks was two and two-tenths years, the shortest period was twelve hours and the longest, fifteen and a half years. Eight patients (2.2 per cent) had three attacks of coronary thrombosis. An average interval of two and seven-tenths years elapsed between the first and second attacks. The shortest interval was one week and the longest was nine years. The interval between the second and the third attack averaged three and nine-tenths years; the shortest period was one week, while the longest was eight years. Only two patients (0.5 per cent) had four attacks of coronary thrombosis and great differences in the intervals between attacks occurred, varying from a few hours to ten and a half years.

It is interesting and significant that only three women (1.1 per cent) had more than one attack of coronary thrombosis.

#### GENERAL MORTALITY DATA

Death, directly and solely attributable to the heart, occurred in 191 cases (51.6 per cent); death entirely unrelated to the heart occurred in ten cases (2.7 per cent), while 169 patients (45.7 per cent) were living when this study was concluded. The patients who died from various phases of heart failure and those who were surviving when this study was made will be considered more fully in ensuing discussions.

#### CERTAIN CLINICAL DATA

The anginal syndrome was experienced by eighty-three patients (22.4 per cent) for varying periods preceding the initial attack of coronary thrombosis. The shortest interval during which the anginal syndrome endured was two weeks, the longest was fifteen years, and the average period was two and nine-tenths years.

In 167 cases (45.1 per cent) the painful seizures either persisted or appeared following the acute occlusion. The anginal syndrome developed following coronary thrombosis in 120 cases (32.4 per cent) in which these seizures had not been experienced before. Twenty-seven patients (7.2 per cent) who experienced the anginal syndrome before the occurrence of coronary thrombosis had no recurrent painful attacks afterward.

Readings of blood pressure were either normal or reduced below normal in 287 cases (77.6 per cent) after cardiac infarction. In seventy-four cases (20 per cent) the blood pressure attained hypertensive levels following the period of recovery, while, in nine cases (2.4 per cent) in which hypertension was known to have occurred prior to the occlusive episode, readings of blood pressure remained normal or below normal during the period of observation.

Localization of the region of infarction was possible in 80.2 per cent of the cases of solitary coronary thrombosis, either by postmortem examination or by electrocardiographic study. The infarct was situated anteriorly in 133 cases (44.8 per cent) and posteriorly in 105 cases (35.4 per cent), whereas localization was impossible in fifty-nine cases (19.8 per cent).

#### THE MODE OF CARDIAC DEATH

It is important to analyze critically the data regarding patients whose death was directly or indirectly the result of coronary thrombosis. Death directly ascribable to coronary thrombosis occurred in seventy cases (36.6 per cent of cardiac deaths) and the average period of survival was only five days. The shortest period of survival was five minutes, while the longest was six weeks.

TABLE 1.—Age and Sex Incidence

Decade of Life	Total		Males (87.6 per Cent)		Females (12.4 per Cent)	
	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent
30 to 39	6	1.6	6	1.9	0	0.0
40 to 49	63	17.0	60	18.5	3	6.5
50 to 59	148	40.0	135	41.7	13	28.3
60 to 69	118	31.9	99	30.6	19	41.3
70 to 79	30	8.1	22	6.7	8	17.4
80 to 89	5	1.4	2	0.6	3	6.5
Totals	370	100.0	324	100.0	46	100.0

Gradual but progressive congestive heart failure was responsible for ninety-nine deaths (51.9 per cent of cardiac deaths). The average period of survival following coronary thrombosis was two and four-tenths years, the shortest interval was two months, and the longest, eleven and a half years.

In twenty-two other cases (11.5 per cent of cardiac deaths) death occurred suddenly and it was impossible to ascertain whether they represented instances of recurrent coronary thrombosis or whether death occurred from some sudden and profound physiologic disturbance in the absence of occlusion. These patients died in their respective communities. The average period of survival following known coronary thrombosis was two and two-tenths years; the shortest period was one month, while the longest period was eight years.

#### THE RELATION OF AGE AND SEX TO DEATH

The greatest number of cardiac deaths occurred when the patients were between the ages of 50 and 70 years; 73.8 per cent of the mortality was accounted for within these ages. This percentage, however has no great

significance, for 71.9 per cent of the total group of patients who had coronary thrombosis were in these decades of life. The same generalization is applicable to the analysis of data pertaining to the mode of cardiac dissolution.

As previously emphasized, a great discrepancy in the sex incidence of coronary thrombosis occurred, a ratio of seven males to one female. However, cardiac death occurred with greater relative frequency among females; the cardiac mortality among females was 63 per cent (twenty-nine patients) whereas among males it was 50 per cent (162 patients). This appears to be a significant observation, indicating that, in spite of the relative infrequency of coronary thrombosis among women, the cardiac mortality among those who have the condition is appreciably higher than it is among men. This is in part explained by the relatively higher incidence of coronary thrombosis in the later age periods among women. Death immediately related to coronary thrombosis occurred with predominant frequency among women; there were eighteen cases of such death (62.1 per cent) in contrast to fifty-two cases (32.1 per cent) among men. An almost complete reversal of percentages was found in cases in which death occurred from gradual cardiac failure. There were eighty-nine men (54.9 per cent) and ten women (34.5 per cent). Among the cases in which sudden death occurred but the exact cause of it could not be determined, there were twenty-one men (13 per cent) and only one woman (3.4 per cent). In table 2, detailed data can be found, based on the total number of cardiac deaths and not on the relative difference in percentages between the two sexes.

It is an acknowledged fact that coronary sclerosis is relatively uncommon among women and it has been stated that the relatively high mortality when the condition is complicated by coronary thrombosis is related to the fact that the heart is unprepared to meet this severe insult. This inability is said to be attributable to the lack of anastomotic coronary circulation which

TABLE 2.—*The Relation of Cardiac Death to Sex and Age \**

Decade of Life	Coronary Thrombosis				Gradual Cardiac Failure				Sudden Death			
	Males		Females		Males		Females		Males		Females	
	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent
40 to 49	5	2.7	0	0.0	19	9.9	0	0.0	2	1.0	0	0.0
50 to 59	26	13.7	5	2.7	33	17.3	4	2.1	11	5.6	0	0.0
60 to 69	16	8.4	5	2.7	30	15.7	4	2.1	6	3.1	1	0.5
70 to 79	4	2.1	6	3.1	6	3.1	1	0.5	2	1.0	0	0.0
80 to 89	1	0.5	2	1.0	1	0.5	1	0.5	0	0.0	0	0.0

\* Percentages calculated on basis of total cardiac deaths.

probably would occur, to some extent at least, when impairment of the coronary circulation was brought about gradually. In analyzing the data in this study, and accepting the existence of the anginal syndrome preceding the occlusive episode as evidence of coronary sclerosis, the explanation that the heart is unable to meet the severe insult is found to be invalid. The incidence of the anginal syndrome preceding coronary thrombosis was about equal in the two sexes: males 22.5 per cent and females 21.7 per cent. So far as the data of this study were concerned, the question of the differences in incidence of the anginal syndrome and in mortality between the two sexes remains enigmatic.

#### THE RELATION OF THE DURATION OF PAIN TO DEATH

The question whether the duration of symptoms attending sudden occlusion of a coronary artery is significant in relation to prognosis frequently has received attention. The clinical impression is that it is not significant and the data in this investigation clearly support this view. A great variation in data occurs and in order to emphasize the fact that no correlations are possible detailed analysis is submitted in table 3.

TABLE 3.—*Duration of Pain in Coronary Thrombosis in Relation to Death and Survival in 288 Cases of Solitary Occlusion \**

Duration of Pain, Hours	Cardiac Deaths	Average Period of Survival After Attack	Patients Living	Average Time After Attack, Years
0 to 1	3	8 minutes	3	2.8
1 to 2	13	2.1 years	24	4.6
2	13	3.4 years	19	5.2
3	13	1.9 years	17	4.6
4	11	2.1 years	7	5.5
5	7	9.6 months	9	5.5
6	11	2.5 years	10	5.6
7	1	1 day	1	6.2
8	11	1.2 years	5	6.6
9	3	3 years	2	5.8
10	4	2.3 years	8	3.7
11	0	.....	1	3.8
12	8	1.7 years	3	4.3
14	1	4.5 years	0	
18	6	11 months	2	2.8
20	3	1.4 months	3	2.9
24	10	2.3 years	11	4.9
25	0	.....	2	4.9
30	2	6 days	2	5
36	5	7 months	4	6.9
48	10	2.7 years	11	5
72	4	5 years	1	4
?	2	4 months	2	3.8

\* Nine cases in which death occurred from diseases unrelated to the heart not included.

#### THE RELATION OF RECURRENT CORONARY THROMBOSIS TO DEATH

The number of patients who had, respectively, one, two, three or four attacks has been given in the section on recurrence of coronary thrombosis. Recurrent coronary thrombosis was almost limited to men, seventy cases (21.6 per cent), while only three patients (6.5 per cent) who had recurrent coronary thrombosis were women. The cardiac mortality progressively increases with recurrent coronary thrombosis. Cardiac death occurred in 141 cases (47.5 per cent) in which there was one attack, in forty-four cases (69.8 per cent) in which there were two attacks and in six cases (75 per cent) in which there were three attacks. Interestingly, the two patients who had four episodes of coronary thrombosis were still living when this report was written and will be discussed more fully later.

#### THE RELATION OF THE SITUATION OF THE INFARCT TO THE MODE OF CARDIAC DEATH IN 119 CASES OF SOLITARY CORONARY THROMBOSIS

The cardiac mortality in cases in which the infarct was situated in the anterior surface of the left ventricle (56.3 per cent) was slightly greater than it was in those cases in which the infarct was situated in the posterior wall (43.6 per cent). Only slight differences in the mode of cardiac death occurred in the two groups. Death directly attributable to coronary thrombosis occurred in eighteen cases (26.9 per cent) of anterior infarction and in twelve cases (23.1 per cent) of posterior infarction. Gradual heart failure accounted

for forty-two deaths (62.7 per cent) in cases of anterior infarction and for thirty-two deaths (61.5 per cent) in cases of posterior infarction. Sudden death of indeterminate cause occurred in seven cases (10.4 per cent) of anterior infarction and in eight cases (15.4 per cent) of posterior infarction.

#### THE RELATION OF PREEXISTING ANGINA PECTORIS TO DEATH

In the majority of cases in this study, the history of the preexistent anginal syndrome was the only conclusive evidence of coronary disease having been present before occurrence of acute occlusion. While undoubtedly other evidence existed in numerous cases, it was necessary to draw conclusions from the histories, for coronary thrombosis either occurred at the time that the patient was first observed at the Mayo Clinic or had occurred before.

Eighty-three patients (22.4 per cent) admitted the previous existence of the anginal syndrome. It is necessary to determine the difference in mortality between those patients who experienced the anginal syndrome before occlusion and those who did not. Cardiac death occurred in fifty-five cases (66.3 per cent) in which there was preexistent angina pectoris, while among those patients who had not experienced these symptoms previously, 136 (47 per cent) died from heart disease. There was no appreciable difference regarding the mode of cardiac death in the two groups.

The mortality figures as gleaned from this study permit the adoption of a somewhat more optimistic attitude toward coronary thrombosis than is generally

TABLE 4.—*The Period of Survival Following Coronary Thrombosis of Patients Whose Deaths Were Cardiac in Nature*

Period of Survival after Episode	One Episode of Coronary Thrombosis	Two Episodes of Coronary Thrombosis		Three Episodes of Coronary Thrombosis		
	Patients	First Patients	Second Patients	First Patients	Second Patients	Third Patient
0 to 24 hours..	7	0	9	0	0	0
1 to 7 days . .	20	0	3	0	0	1
1 week to 1 month	10	1	3	0	0	0
1 to 3 months.	8	3	2	0	0	0
3 to 6 months.	10	3	0	1	2	2
6 mos. to 1 year.	16	3	4	0	0	0
1 to 2 years	20	4	5	0	0	0
2 to 3 years	10	5	2	0	0	0
3 to 4 years	16	8	2	0	0	1
4 to 5 years	9	9	3	0	0	0
5 to 6 years	8	1	0	1	2	0
6 to 7 years.	1	2	1	1	1	0
7 to 8 years	1	1	0	0	0	0
8 to 9 years	2	0	0	0	0	0
9 to 10 years	0	0	0	1	0	0
10 to 11 years	1	1	0	0	0	0
11 to 12 years	1	0	0	0	1	0
12 to 13 years.	0	1	0	0	0	0
13 to 14 years	0	0	0	0	0	0
14 to 15 years	0	0	0	1	0	0
15 to 16 years	0	1	0	1	0	0
16 to 17 years.....	0	1	0	0	0	0
Average survival, years	2.03	3.03	1.47	8.7	5.0	1.2

held. While the cardiac death rate is high, the many survivors are testimony to the fact that the heart is often capable of making a remarkable recovery from probably the most terrific insult to which it is exposed and even from repetition of such insults. Furthermore, when it is realized that more than half (52.5 per cent) of the patients survived solitary occlusion, it is not unanticipated that the death rate following multiple

occlusions is greatly increased. It is noteworthy that several patients who ultimately died from cardiac disease lived from fifteen to seventeen years following coronary thrombosis. A larger group lived from seven to twelve years. The detailed data regarding the period of survival of patients who died from heart disease are presented in table 4.

#### PATIENTS WHO, FOLLOWING CORONARY THROMBOSIS, WERE ALIVE AT THE TIME OF THE STUDY

Patients who survive coronary thrombosis, particularly those who have continued to live in reasonably

TABLE 5.—*Comparative Data Regarding Age and Sex of Patients Living at Conclusion of Study and of Those Who Died from Heart Disease\**

Decade of Life	Living Patients				Cardiac Deaths			
	Males		Females		Males		Females	
	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent
30 to 39	6	3.5	0	0.0	0	0.0	0	0.0
40 to 49	33	19.7	3	1.7	26	13.6	0	0.0
50 to 59	60	36.0	3	1.7	70	36.7	9	4.7
60 to 69	46	27.2	9	5.2	52	27.2	10	5.2
70 to 79	8	4.7	1	0.5	12	6.3	7	3.7
80 to 89.	0	0.0	0	0.0	2	1.0	3	1.6
Total and percentage	153	90.9	16	9.1	162	84.8	29	15.2

\* Percentages calculated on basis of total in each group.

good health for a considerable number of years, are of unusual interest and merit careful study. It is evident that patients who were alive when the study was completed may have died before this paper is published. However, they will be referred to as alive "now."

It is true that many patients living at this time are ultimately destined to die from heart disease. In an investigation of this character it is impossible to obtain accurate information regarding the care exercised in the manner of living by many patients following coronary thrombosis. This could be determined only by almost continuous contact with them over the ensuing years and obviously such contact was not possible in the great majority of instances. There is no doubt that the strict maintenance of a carefully individualized regimen plays an important part in the life expectancy of the patients who survive the immediate perils of sudden coronary occlusion.

One hundred and sixty-nine patients (45.7 per cent) are alive. It is noteworthy that the six patients who had coronary thrombosis between the ages of 30 and 40 years are all living. The comment frequently has been heard that coronary thrombosis in the earlier age periods is likely to be fatal, because, it is said, lack of compensatory anastomotic vascular channels leaves the heart unprepared for the accident. This study does not bear out that presumption, because the incidence of survival in the fourth and fifth decades is greater than the cardiac mortality (table 5). As the cases in the later decades are studied, it becomes evident that mortality overbalances survival.

Relatively more men than women have continued to survive coronary thrombosis. This is clearly shown when comparative data on death and survival are analyzed. Of the total number of patients, 87.5 per cent were men but 153 (90.9 per cent) of the surviving

patients are men, while 162 (84.8 per cent) men died from cardiac disease. Of the total number of patients, 12.4 per cent were women; but there were sixteen (9.1 per cent) women among the survivors, while twenty-nine (15.2 per cent) women were included among the cardiac deaths.

Among the patients living are twenty-two who experienced multiple episodes of coronary thrombosis. Eighteen had two episodes; two experienced three episodes, and two others survived four attacks (table 6). The latter two patients merit further comment, as their continuity of life has defied all prognostication. One patient, now 60 years of age, a resident of Rochester, has been under close observation for twelve years and remains in surprisingly good condition under a strict cardiac regimen. The other patient, now 76 years of age, resides in a neighboring town and has been followed through correspondence. He is bedridden owing to recurrent congestive failure but has survived his first attack for five years.

The situation of the infarct appeared to have little influence on death or survival. Sixty patients (50.4 per cent) of those who have anteriorly situated infarcts are living, while fifty-one (42.8 per cent) who have posterior infarcts also survive.

It was important to determine the present condition of the survivors (table 7) and it was encouraging to note that seventy-two (42.6 per cent) reported themselves in good health while presumably observing only indifferent regimens. Thirty-nine (23.1 per cent) of the survivors remain in good health by adhering to definite restrictions. Forty-nine patients (28.9 per cent) complain of the anginal syndrome, six (3.6 per cent) are bedridden owing to congestive heart

No patients were less than 30 years of age, the incidence in the fourth decade of life was 1.6 per cent, while 17 per cent of the patients were in the fifth decade. There was a great predominance of males over females; the ratio was 7:1.

2. Solitary coronary occlusion occurred in 80.3 per cent of the cases; two episodes occurred in 17 per cent, three attacks in 2.2 per cent, and four episodes in 0.5 per cent of the cases.

TABLE 7.—Patients Living and Their Condition at Conclusion of Study\*

Decade of Life	Condition of Patients									
	Good Health		Well with Restrictions		Have Anginal Syndrome		Congestive Failure, Bedridden		Had Cerebral Vascular Accident	
	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent	Patients	Per Cent
30 to 39	3	1.8	0	0.0	2	1.2	1	0.6	0	0.0
40 to 49	20	11.8	4	2.4	12	7.1	2	1.2	0	0.0
50 to 59	30	17.7	12	7.1	20	11.8	0	0.0	1	0.6
60 to 69	16	9.4	10	11.2	14	8.3	2	1.2	2	1.2
70 to 79	3	1.8	4	2.4	1	0.6	1	0.6	0	0.0
Total number and percentage	72	42.6	30	23.1	49	28.9	6	3.6	3	1.8

\* Percentages based on total number of patients living.

3. Death directly attributable to the heart occurred in 51.6 per cent of the cases, while other diseases such as pneumonia, cancer and nephritis accounted for the death of 2.7 per cent of patients. The patients surviving at the conclusion of the study comprised 45.7 per cent of the group.

Of the cardiac deaths 36.6 per cent were ascribable to coronary thrombosis; gradual cardiac failure accounted for 51.9 per cent, and sudden death of uncertain mechanism for 11.5 per cent.

4. While the incidence of females in this study was relatively small (12.4 per cent) their cardiac death rate was considerably greater than among males: females 63 per cent and males 50 per cent.

5. There was no correlation between the duration of pain in coronary thrombosis and death or survival.

6. The cardiac death rate increased progressively with recurrent coronary thrombosis. Among cases of solitary coronary occlusion the cardiac mortality was 47.5 per cent, among cases in which there were two attacks 69.8 per cent, and among those in which three attacks occurred 75 per cent.

7. The patients living at conclusion of this study comprised 45.7 per cent of the group. Of these, 42.6 per cent reported themselves to be in good health, 23.1 per cent were well while living a restricted life, 28.9 per cent had recurrent anginal attacks, 3.6 per cent had congestive heart failure, and 1.8 per cent had had cerebral vascular accidents.

TABLE 6.—Period of Survival of Patients Alive Following Coronary Thrombosis

Period of Survival After Episode	One Episode of Coronary Thrombosis, Patients		Two Episodes of Coronary Thrombosis		Three Episodes of Coronary Thrombosis			Four Episodes of Coronary Thrombosis			
	First Patients	Second Patients	First Patients	Second Patients	First Patients	Second Patients	Third Patients	First Patients	Second Patients	Third Patients	Fourth Patients
0 to 1 year.....	0	0	0	0	0	0	1	0	1	1	1
1 to 2 years.....	11	1	12	0	0	0	1	0	0	0	0
2 to 3 years.....	17	3	12	0	0	0	0	0	0	0	0
3 to 4 years.....	24	3	5	0	0	0	0	0	0	0	0
4 to 5 years.....	24	6	3	0	1	0	0	0	0	0	1
5 to 6 years.....	17	1	0	1	0	0	1	0	1	1	0
6 to 7 years.....	14	2	1	0	0	1	0	0	0	0	0
7 to 8 years.....	14	2	2	0	1	0	0	0	0	0	0
8 to 9 years.....	5	2	1	0	0	0	0	0	0	0	0
9 to 10 years.....	3	1	0	1	0	0	0	0	0	0	0
10 to 11 years.....	4	0	0	0	0	0	0	1	1	0	0
11 to 12 years.....	2	0	0	0	0	0	0	0	0	0	0
12 to 13 years.....	2	0	0	0	0	0	0	0	0	0	0
Average survival, years.....	5.0	5.3	3.9	7.5	6.0	3.5	8.0	5.5	3.0	2.5	

failure, and three (1.8 per cent) have suffered cerebral vascular accidents at various periods following coronary thrombosis.

When the surviving patients are considered in relation to the complete group of patients comprising this study, it is found that 19.5 per cent are in remarkably good health and 10.5 per cent are getting along well with restrictions; in the aggregate this results in 30 per cent of the group.

SUMMARY AND CONCLUSIONS

1. In this study of 370 cases of coronary thrombosis, in 71.9 per cent the thrombosis occurred when the patients were between the ages of 50 and 70 years.

Potato Famines and Scurvy.—Cooking and canning diminishes the vitamin C values of different foods in very different degrees, and milk and cooked potatoes, while not having high concentrations of this vitamin, may be among the most important sources of it. In northern Europe, including Ireland, scurvy was very common up to the time of the introduction of the potato after the discovery of America; then, as potato culture became common, scurvy became uncommon; and, during the past century, a failure of the potato crop over a wide area has usually been followed by an epidemic of scurvy during the following winter or early spring.—Sherman, H. C.: Food and Health. New York, Macmillan Company, 1934.



## Clinical Notes, Suggestions and New Instruments

### INTUSSUSCEPTION OF JEJUNUM FOLLOWING GASTRO-ENTEROSTOMY

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Intussusception of the small intestine into the stomach through the stoma of a gastro-enterostomy following operation is an infrequent occurrence. The literature contains only thirty-nine reported cases. The condition probably occurs more often but is not recognized because of a general lack of knowledge of the possibility of such a complication.

Most of the reported cases were of the acute type, characterized by a sudden onset without any preliminary signs. The earliest case occurred six days after operation.<sup>1</sup> The symptoms and physical signs are those of high intestinal obstruction. The onset is with pain in the upper part of the epigastrium and vomiting, at first gastric contents, then bile and later blood. The abdomen becomes rigid, distended and tender. In some of the cases (about 50 per cent) a tumor mass is palpable. The course is rapidly downhill unless an immediate operation is performed. The usual operative procedure is a reduction of the intussusception and in some instances resection. The condition may be confused with a perforating bleeding ulcer, an error that was made in the case here reported.

Besides the acute form, a chronic or intermittent form may occur, as has been suggested by Sibley.<sup>2</sup> In his case there was a feeling of tightness in the midepigastrium and inability to endure anything tight about the waist. The attacks came on from one to three hours after meals. At fluoroscopy it was found that a loop of jejunum had invaginated into the stomach, although at the time of operation the intussusception had spontaneously reduced itself.

It is essential, because of the high mortality of this type of intussusception, to recognize the possibility of this complication when confronted with an acute surgical condition of the abdomen at any time interval after a gastro-enterostomy. It is also important to entertain the likelihood of a chronic form of jejunal intussusception to account for unexplained symptoms following gastro-enterostomy.

#### REPORT OF CASE

The following case was observed in the surgical service of the Montefiore Hospital:

*History.*—E. S., a man, aged 43, was admitted to the hospital Nov. 14, 1932, because of multiple arthritis and spondylitis.

In 1917 he began to complain of gastric symptoms due to a gastric ulcer. In December 1931 he was operated on for a pyloric stenosis secondary to a gastric ulcer, at which time a posterior gastro-enterostomy was performed. The operation relieved all gastric complaints. The arthritis began in 1923. Examination on admission to the hospital showed a generalized joint involvement. An x-ray examination of the gastro-intestinal tract showed a well functioning gastro-enterostomy.

Dec. 27, 1933, at 3:30 a. m., a sharp pain, cramplike in character, developed in the right upper quadrant of the abdomen, and he vomited about 700 cc. of bloody fluid. Examination revealed a soft abdomen, somewhat tender in the right upper quadrant. There was no rigidity and no rebound. The temperature and pulse were not elevated. An enema given at 5 a. m. was effectual and did not contain any blood.

When seen at 10 o'clock there was some tenderness and rigidity in the upper part of the abdomen. A mass could be felt in the region of the umbilicus, about the size of an orange, extending toward the left upper quadrant. The temperature, pulse and blood count were normal.

The impression was that we were dealing with an acute gastric hemorrhage from a gastric or gastrojejunal ulcer, with the possibility of a slow perforation and localized peritonitis. Opinions as to indication for operation varied. Some felt that immediate laparotomy was indicated because of the development of the mass. Others felt that the active bleeding

warranted more conservative measures. Another suggestion made was that we were dealing with a carcinoma of the stomach with ulceration and hemorrhage.

Supportive treatment with transfusions was decided on. The patient became progressively worse, bloody vomiting continued, and he soon died.

*Autopsy.*—When the abdomen was opened the stomach was found to fill the upper half of the abdominal cavity, reaching as far down as the umbilicus. A large mass could be felt inside the stomach. The stomach, on being opened, was found to contain about 0.5 liter of bloody fluid. Through the stoma of the gastro-enterostomy on the posterior wall of the stomach about 15 cm. of invaginated jejunum protruded into the lumen. This intussuscepted mass was almost completely gangrenous.

#### CONCLUSION

There is a possibility of an acute intussusception through a gastro-enterostomy opening following operation. Because of the high mortality of this complication, immediate recognition and operation are imperative. The chronic or intermittent form may explain some of the gastric symptoms following gastro-enterostomy.

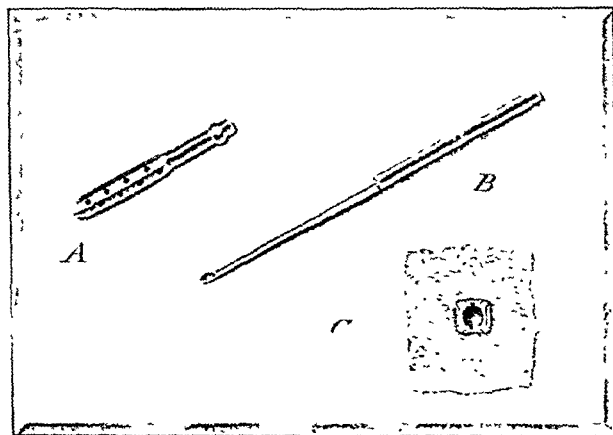
1185 Park Avenue.

### AN IMPROVEMENT OF SOUTHEY'S TUBES

CLIFTON B. LEECH, M.D., PROVIDENCE, R. I.

The use of small cannulas, inserted into the feet or legs by means of trocars, in cases of massive edema, for the purpose of draining off the edema fluid was introduced by Southey in 1877. In recent years attention has been redirected to these tubes by Paul D. White and others.

Drainage of fluid by means of these in cases of obstinate edema, not relieved in other ways, is often very satisfactory. Frequently, however, the tubes drain well for only a comparatively short period, soon becoming plugged. There seems to be two reasons for this: first, the small diameters of the tube and its openings and, second, its smooth, cylindric contour, which permits the tissues to adhere closely to it, thereby tending to plug the openings and prevent drainage.



A, the improved tube; B, the trocar; C, a cross section of the tube as it lies embedded within the tissues.

There seems to be no objection to using tubes with twice the diameter of the ordinary Southey cannula, with openings correspondingly large. In order to overcome the tendency of the edematous tissues to fit tightly over the openings so as to plug them, it seems desirable to have a tube so designed as to be firmly grasped by the tissues and yet at the same time to offer free channels for drainage. This has been accomplished by milling four grooves lengthwise of the tube. This leaves four projecting corners, which are grasped by the tissues, tending to keep them stretched across the grooves and away from the drainage openings, which are staggered within them.

In tests devised to compare the efficiency of these tubes with the ordinary Southey tubes, use was made of fine sponge rubber sealed within a thin rubber envelop and fed with water under

From the Surgical Service of the Montefiore Hospital.

1. Lewisohn, Richard: *Ann. Surg.* 76: 543 (Oct.) 1922.

2. Sibley, W. L.: *Proc. Staff Meet., Mayo Clin.* 9: 364 (June 20) 1934.

slight gravity pressure. It was found that the improved instrument drained water from this device approximately six times as rapidly as did the ordinary Southey tube. In actual practice the improved tubes have been much more efficient than the old and have shown almost no tendency to plugging. The tubes were used recently in the thighs and feet of an adult patient with intractable edema due to the nephrotic type of renal disease. This patient did not respond to any type of diuretic and was in such a state of discomfort, owing to the general anasarca, that the tubes were inserted merely in the hope of lessening the tension of the waterlogged tissue. There immediately ensued a profuse flow, amounting to more than 5 liters during the first twenty-four hours and continuing for more than a week, at the end of which time the tubes either fell out because of shrinkage of the tissues or were removed. In this case there was marked reduction of ascites as the drainage continued through the tubes. Incidentally, as the edema was drained off, a spontaneous diuresis occurred, as if reduction of intra-abdominal pressure permitted an improvement in renal function. The diuresis has continued, so that it has not been necessary to reinsert the tubes, although six weeks has passed since their removal.

The designing and tooling of these improved tubes was accomplished with the invaluable cooperation of Mr. Ernest J. Beattie of Fall River, Mass., who turned out, by hand, the experimental models. These tubes and trocars are now available in stainless, rustless metal of extreme hardness.

211 Angell Street.

## Special Article

### COMMENTS ON THE COPELAND FOOD, DRUGS, THERAPEUTIC DEVICE, AND COSMETIC BILL

AS REPORTED BY THE COMMITTEE ON INTERSTATE  
AND FOREIGN COMMERCE TO THE HOUSE  
OF REPRESENTATIVES, MAY 22, 1936

WILLIAM C. WOODWARD, M.D.

Director, Bureau of Legal Medicine and Legislation, American  
Medical Association

CHICAGO

The Copeland food, drugs, therapeutic device, and cosmetic bill,<sup>1</sup> which passed the Senate May 28, 1935, was reported<sup>2</sup> to the House of Representatives by the Committee on Interstate and Foreign Commerce, May 22, 1936, with proposed amendments and with the recommendation that the bill as thus amended be enacted. The bill has therefore taken its place on the House calendar. An effort will probably be made to have it brought up under a special rule within the next few days.

The process of attenuating and debasing this legislation began immediately after the introduction of the Tugwell bill,<sup>3</sup> June 12, 1933. It has been continued vigorously right up to the present moment. The bill as reported is weaker than it was when it was referred to the committee, and it will probably be better for the public if in the end the bill is not enacted, unless it can be strengthened on the floor of the House or in conference. To enact bad legislation in the hope of being able to strengthen it by later amendments is not likely to give satisfactory results and will almost certainly retard the passage of the needed laws.

Comments on some of the more important features of the Copeland bill as reported by the House com-

mittee follow. Readers who are interested in this legislation should write or telegraph their views immediately to their respective senators and representatives. It is possible that the bill will be acted on before this issue of THE JOURNAL reaches its readers, but there will still remain time for the strengthening of the bill in conference.

#### UNCERTAIN STANDARDS FOR DRUGS

The House Committee on Interstate and Foreign Commerce has unfortunately left the standards proposed by the bill for pharmacopeial and formulary drugs in the same unsound and deceptive state in which they were when the bill left the Senate. It has been made so clear recently by the courts that there are limits to the authority of Congress to delegate legislative power to other agencies that it seems rather remarkable that the committee should have seen fit to acquiesce in the delegation to three unnamed, private corporations, of the right to fix through the United States Pharmacopeia, the Homeopathic Pharmacopeia of the United States, and the National Formulary, and through supplements to these publications, issued daily or hourly if the representatives of these corporations deem it proper, the legal standards for drugs throughout the United States, without limitation of any kind, without defining the respective jurisdictions of each such legislative agency, and without providing in any way for the making of standards for drugs after the courts shall have declared this delegation of legislative power to be unconstitutional. Even the Secretary of Agriculture is to be required, under the terms of this bill, to give ample notice and a public hearing before he proceeds to promulgate regulations under the legislative authority conferred on him; and after he has promulgated a regulation it must be published in the Federal Register and the world be thus officially notified of its promulgation, and a reasonable time must elapse thereafter before the secretary's regulations become effective. But the publishers of the United States Pharmacopeia, the Homeopathic Pharmacopeia of the United States and the National Formulary, and of supplements to them, are, the committee proposes, to be at liberty to formulate standards in the secrecy of their respective office, without notice and without hearing, and to make any minimum technical publication of them, and such standards are to become effective instantly; and noncompliance is to mean fine, imprisonment and possible seizure by the government of the drugs thus suddenly made contraband by the fiat of certain private citizens.

But quite as remarkable is the fact that the bill does not really require compliance with the standards that it thus authorizes to be established; for no drug sold under a name recognized by the United States Pharmacopeia or by the Homeopathic Pharmacopeia of the United States or by the National Formulary or purporting to be a drug the name of which is so recognized, although differing from the standard of strength therein set forth, is to be regarded as adulterated if its own standard of strength, whatever that may be, is plainly stated on the label. Every manufacturing pharmacist is at liberty to use the pharmacopeial or formulary name and to fix his own standard for the preparation to which he assigns it, and the retail pharmacist who receives an order for a drug under its official name will not violate the provisions of the pending bill, if it should be enacted, if he delivers a drug of

1. S. S. Seventy-Fourth Congress.

2. H. R. Report No. 2755, Seventy-Fourth Congress.

3. S. 1944, Seventy-Third Congress.

one-half or ten times the official strength, provided only that on the label he indicates plainly, in such way as he thinks proper, the strength of the drug that he sells.

#### FRAUDULENT ADVERTISING OF DRUGS AND THERAPEUTIC DEVICES TOLERATED

The Copeland bill, as it passed the Senate, provided that advertisements of drugs or devices claiming for them any therapeutic effects in the treatment of Bright's disease, cancer, tuberculosis, poliomyelitis (infantile paralysis), venereal diseases, or heart and vascular diseases should be deemed false. It provided, however, that such advertisements, if not otherwise false and misleading, (1) might be sent to members of the medical and pharmaceutical professions and be printed in the scientific periodicals of those professions and (2) might be disseminated for the purpose of public health education by persons not commercially interested in the sale of the drugs and devices to which such advertisements related. The House committee, however, proposes to strike out the exemption permitting the dissemination of such advertisements for the purpose of public health education and to give the Secretary of Agriculture authority to establish exemptions in favor of drugs and devices advertised for the treatment of the diseases named above with respect to which, in his opinion, representations as to therapeutic effects would not be in fact false and misleading; in other words, authority to determine whether a drug or device does or does not have a therapeutic effect on any or all of the diseases named and to permit its advertisement for the treatment of such of them as he believes may be benefited. The committee has recommended, too, that no advertisement of any drug shall be deemed to be false and misleading within any meaning whatever of the section defining false advertisements, if it is disseminated only to members of "the medical profession" and appears only in the scientific periodicals of that profession. The significance of the committee's recommendation will be best understood when it is remembered that the term "medical profession," wherever it is used in the bill, means "the legalized professions of the healing art" and therefore includes not only practitioners of medicine but also dentists, pharmacists, chiropractors, naturopaths, osteopaths, midwives, registered nurses, optometrists, chiropodists, and possibly other similar classes. Why the dissemination of false and misleading advertisements of drugs among such practitioners of these classes should be legalized is not clear.

The bill proposes no fixed standard for the labeling or advertising of drugs not named in either pharmacopeia or in the formulary or for therapeutic devices. It leaves the falsity or the misleading character of such labeling or advertising to be determined after the event, according to the opinion prevailing at the time of the sale, in the place where the sale is made. For the labeling or advertising of a drug or a device is not to be deemed false or misleading if it is supported by substantial and reliable opinion of doctors of medicine, or of dentists, pharmacists, midwives, chiropodists, osteopaths, chiropractors, naturopaths and other similar practitioners of the healing art, each within his own field, licensed by law in the state or territory where the drug or device to which the action relates is held, sold or distributed. Obviously such opinions will vary from time to time and from place to place, and no manufacturer or dealer can tell in advance just what they will be at any particular time and any particular place.

Incidentally, just what is to constitute "medical opinion" in determining the truth or falsity of claims made in the labeling or advertising of foods and cosmetics is not clear, for the statutory definition of "medical opinion" laid down in the bill seems to relate only to drugs and devices, the language referring to the place where the drug or device is held, sold or distributed, and being silent as to foods and cosmetics.

#### CONCEALMENT OF INGREDIENTS OF FOODS AND DRUGS AUTHORIZED

As it passed the Senate, this bill provided that a food fabricated of two or more ingredients should bear on its label the common or usual name of each such ingredient, with certain exceptions not relevant here. The bill as recommended by the House Committee on Interstate and Foreign Commerce, however, provides that the nature of the ingredients of any proprietary food need not be thus disclosed to the consumer, if they have been disclosed to the Secretary of Agriculture and if disclosure on the label would give to competitors information they could not otherwise obtain. With respect to drugs, in which the need for the disclosure of ingredients is even more urgently needed than it is in the case of foods, the committee has been even more favorable to secrecy with respect to quack nostrums, although it has failed to recommend secrecy for the ingredients of mixtures prescribed by physicians. The bill as it passed the Senate required that the label of a drug fabricated of two or more ingredients bear the name of each active ingredient, including any alcohol, except where the Secretary of Agriculture found compliance with this requirement impracticable. Obviously this requirement is applicable to drugs fabricated on physicians' prescriptions and when such drugs enter interstate commerce, as interstate commerce is defined by this bill, they must be labeled according to the requirements of the bill. But the House committee, in reporting this bill, recommended that the disclosure of the formula on the label of patent proprietary medicines, except as to alcohol, be not required if the ingredients are fully and correctly disclosed to the Secretary of Agriculture. In the case of food, secrecy of formula is assumedly to be permitted only to protect the manufacturer from his competitors, for registration of the names of the ingredients with the secretary, as a substitute for printing them on the label, is to be permitted only when disclosure on the label would give competitors that which they could not otherwise obtain. But, in the case of drugs, secrecy is apparently quite as much for the purpose of keeping the patient in the dark as it is for the purpose of concealing the nature of the ingredients from competitors for it is to be permissible under all conditions whatever.

#### DEFINITIONS OF "MEDICAL PROFESSION" AND OF "MEDICAL OPINION" ARE ARBITRARY AND CONTRARY TO ACCEPTED USAGE

While this bill assumes to define standards of quality and truthfulness for foods, drugs, therapeutic devices and cosmetics, and for labeling and advertising relating to them, it starts out with definitions of "medical profession" and "medical opinion" that are contrary to established fact and therefore false. When the bill says that every person who is licensed to practice any form of the healing art by the law of the state or territory in which he resides is a member of the medical profession, it simply misstates the fact; for midwives,

osteopaths, chiropodists, chiropractors, pharmacists, nurses, optometrists and others of similar types are not members of the medical profession. To say, as the bill does, that the opinion of members of any such group within its own field constitutes "medical opinion" is equally false.

DELEGATION OF RULE MAKING AUTHORITY TO  
THE SECRETARY OF AGRICULTURE; ABANDONMENT OF PROPOSED ADVISORY  
BOARDS

The delegation of legislative authority to the Secretary of Agriculture proposed by this bill is probably within constitutional limits. The duties that he will be called on to perform under that grant of authority are, however, certainly far beyond the power of any one man to perform properly. Under the authority that it is proposed to grant, it will be necessary for the secretary to rely largely on the officers and employees of the Department of Agriculture not only for information and advice but also for the actual exercise of discretion, and the delegation of discretion to subordinates will not only be unlawful but will deprive the people of the benefit of the judgment of the secretary himself. If Congress intends that the subordinates in the Department of Agriculture shall make the rules that are to be promulgated under this bill, it would be better for the bill so to provide. It must be remembered, however, that permanent officers and employees in the government service almost invariably adopt in a short time a strictly official way of looking at matters and, unless that manner of thinking is offset in some way, rules are apt to be adopted by such officers and employees that do not adequately reflect the views or needs of industry or of the public.

For that reason it seems unfortunate that the House Committee on Interstate and Foreign Commerce should have proposed to do away entirely with all the advisory committees proposed in the Senate bill. Undoubtedly the number and variety of committees proposed by that bill was unnecessary and unwise, but certainly a middle course could have been found. If no such course could be found, then at least the present plan should be continued, whereby rules are promulgated by the joint action of the Secretary of Agriculture acting with the Secretary of the Treasury, who can best advise, with respect to human health, through the Public Health Service, and acting with the Secretary of Commerce, who is best able to advise with respect to the commercial interests involved. By vesting in the Secretary of Agriculture, as the bill as just reported now proposes to do, autocratic legislative power, along with the executive functions necessarily vested in him, and the judicial duties—including the duty of determining, even after he knows that the law has been violated, whether he will or will not refer an offense to the courts or exercise clemency in his own right—comes near to creating him an autocrat.

ENFORCEMENT OF LAW CUMBERSOME, EXPENSIVE  
AND SLOW

Responsibility for the enforcement of this bill is to be divided between the Secretary of Agriculture and the Federal Trade Commission. The jurisdiction of the secretary is to be limited to matters relating to adulteration and misbranding. He is to have no jurisdiction over advertising. In fact, false advertising is not a criminal offense under this bill. If the secretary

believes that any one is advertising in a manner forbidden by this bill, the most he can do is to report the matter to the Federal Trade Commission for action.

Even though the Secretary of Agriculture knows that some one is guilty of adulterating or misbranding foods, drugs, therapeutic devices or cosmetics, or of distributing a food from a factory that has no permit, when one is required, he need take no action. If the infraction of the law is of a minor character—and apparently the secretary is the sole judge of that fact—and the secretary believes that the purposes of the act can be best accomplished by a written notice or warning, he may limit action to the giving of such notice or warning. But if the offense does not come within that class, the most he can do in the first instance is (1) to institute action looking toward the seizure of the offending foods, drugs, therapeutic devices or cosmetics, if they are still within reach, or (2) to serve notice on the person against whom criminal proceedings are contemplated, if he can be found, giving him an opportunity to be heard on the question of a possible violation of the law, and, on cause shown satisfactory to the secretary, a further opportunity to review the secretary's tentative decision to report the case to the United States attorney for prosecution. If after all this the secretary deems it proper to do so, he may report the case to the United States attorney, who thereafter institutes prosecution in the trial court and sees that the case is properly carried up through the appellate courts if necessary.

The procedure following the reference of a case of supposed false advertising by the Secretary of Agriculture to the Federal Trade Commission is even more cumbersome and costly to the taxpayer. The commission must first find that it has reason to believe that the advertisement is false and misleading. If it so decides, it must serve on the supposed offender a complaint and fix a date for a hearing not less than thirty days after the service of the notice. The testimony taken at this hearing must be reduced to writing and filed in the office of the commission. If the commission finds that the advertisement is false, it must make a written report of its findings and serve on the advertiser an order to cease and desist from the dissemination of the false advertisement. If he does not comply, the commission may then apply to the appropriate circuit court of appeals to enforce the commission's order. Until the court has determined the questions involved, after notice to the advertiser, and has affirmed the commission's order, the advertiser may continue to disseminate the advertising in controversy, if he so desires, and this may be a period of months or even years, much longer than the useful life of any ordinary advertising matter.

Why all these obstacles should be placed in the way of the prosecution of offenders against a law of the character of that now under consideration is not clear. Importers, manufacturers and dealers in foods, drugs, therapeutic devices and cosmetics and advertisers of such products, constitute a class probably far above the average in intelligence. They should be able to understand the law and to comply with it. If they cannot, the law should be made sufficiently intelligible to enable them to do so. But certainly, as things now stand, there seems to be manifested on their behalf a tender solicitude lest one of them be convicted of an offense that he did not commit, a solicitude that is not shown for any other class of potential offenders.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING STATEMENT AND REPORT.

HOWARD A. CARTER, Secretary.

### AN APPRECIATION

The Council on Physical Therapy wishes to acknowledge, with appreciation, the efforts of the following consultants, who have so generously contributed their time to the Council by assisting in the investigation of apparatus and the consideration of other problems that have confronted the Council: Drs. Fred L. Adair, Francis Heed Adler, M. Herbert Barker, Simon Benson, William Bierman, Walter M. Boothby, Curtis Burnam, Fremont Chandler, Herman Chor, Eliot R. Clark, Harry Culver, Arthur Curtis, L. F. Curtiss, Géza de Takáts, Alex Day, Cecil K. Drinker, C. W. Edmunds, F. H. Everhardt, Bernard Fantus, Hart Fisher, Jonas Friedenwald, Sanford Gifford, A. Bruce Gill, Samuel Gordon, K. G. Hansson, Austin Hayden, Allan Hemingway, Yandell Henderson, John Sivery Hibben, Kenneth Karl Jones, Arthur K. Koff, A. J. Kotkis, Richard Kovacs, Herman L. Kretschmer, Henry Laurens, Philip Lewin, Franklin P. Lowry, John MacNie, M. L. Mason, M. C. L. McGuinness, A. R. Morrow, Bernard Mortimer, S. A. Morton, Tell Nelson, Horace Newhart, Josef B. Nylin, Clarence A. Patten, George Pfahler, Lewis Pollock, John Pribble, Francis Rackemann, Charles Shannon, William O'Neill Sherman, E. M. Smith Jr., K. W. Stenstrom, Norman E. Titus, Clifford B. Walker, Heinrich Wolf, Mrs. Mary L. Abbey, Miss Gertrude Beard, Mrs. Ardis T. Monk, and Mr. S. L. Osborne.

### EVEREADY PROFESSIONAL CARBON ARC LAMP, MODEL L-1, ACCEPTABLE

Manufacturer: National Carbon Company, Inc., Carbon Sales Division, Cleveland.

This lamp is a carbon arc type generator and is offered by the manufacturer to the medical profession for use in its professional application of carbon arc lamp radiation. The National Carbon Company has no specific recommendation for application of this lamp in any therapeutic procedure. Carbon arc lamps are frequently used by the medical profession in the general fields of pediatrics, tuberculosis and dermatology, and in some other specialized fields. The application can be made only by the physician who is in charge of the particular case.



Eveready Professional model L-1.

The lamp mechanism operates automatically and uses 10 mm. by 12 inch Eveready carbons. The magnetic flux created by the solenoid is carefully designed to coincide with the mechanical balance of the carbon feeding mechanism. This feature provides for maintaining a uniform intensity and volume of illumination by automatically feeding the carbon intermittently when the arc gap becomes of sufficient length to cause a change in the arc voltage.

A transformer, mounted in the stand base, provides for utilizing a comparatively small current input by stepping the voltage down from 110 volts to 50, increasing the amperage proportionately, making it possible to operate on ordinary 15 ampere outlet.

The lamp is mounted in a heavy 16 inch spun and polished aluminum reflector, which is provided with a removable protecting transparent screen. It is equipped with a tilting yoke, which permits directing the light rays from every practical angle. All current carrying parts are fully enclosed and protected in a manner making it impossible for the operator to come in contact with them.

The stand permits raising the lamp to a height of approximately 6 feet. It is provided with an adjustment clamping arrangement which locks the height adjusting tube rigidly with a minimum of pressure of the adjustment knob. The stand base has rubber tire casters and a durable double pole tumbler type switch for turning the lamp on and off. The 15-foot approved service heater cord is plugged into a receptacle mounted into the side of the base.

The approximate operating characteristics of the lamp are as follows: input power, 1,650 watts at 112 volts 60 cycle alternating current; average amperes at arc, 30; transformer efficiency, 85 per cent, and temperature rise of transformer after two hours' continual burning, 47 C.

Experiments with representative specimens of untanned human skin indicate that at a distance of 3 feet from the lamp, when the lamp is burning Eveready Therapeutic C carbons, an erythema is produced in about four minutes. At a distance of 2 feet the same degree of erythema is produced in about two minutes. More susceptible individuals will respond in a somewhat shorter period of time, and more resistant individuals will require a somewhat longer period of exposure to produce the same degree of erythema.

The lamp was tested in a clinic acceptable to the Council and the investigator reported that the lamp gave satisfactory service. Therefore, the Council on Physical Therapy voted to include the Eveready Professional Carbon Arc Lamp, Model L-1, in its list of accepted apparatus.

## Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

FRANKLIN C. BING, Secretary.

### AMENDMENT OF COMMITTEE RULES GOVERNING USE OF THE SEAL

The first paragraph of the section "Rules Governing Use of the Seal" of the Rules and Regulations, May 1935, page 10, has been amended by addition of a second sentence, making the paragraph read:

The Seal may be used on the container label or in connection with any form of advertising effort or display related to the product, after official notification of acceptance by the Secretary of the Committee. In all cases the seal shall appear only on label or advertising pieces which prominently identify the accepted article and the responsible manufacturer or distributor.

### ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

FRANKLIN C. BING, Secretary.

### DURKEE'S BRAND OLEOMARGARINE

Manufacturer.—Durkee Famous Foods, Inc., Chicago.

Description.—Oleomargarine prepared from oleo oil, refined neutral lard, pasteurized cultured milk, refined cottonseed oil, salt and monostearyl sodium sulfoacetate.

Manufacture.—Essentially the same as described for Durkee's Vegetable Oleomargarine (THE JOURNAL, Aug. 3, 1935, p. 369).

Analysis (submitted by manufacturer).—

	per cent
Moisture .....	15.8
Ash (other than sodium chloride) .....	0.1
Sodium chloride .....	3.0
Fat (ether extract) .....	80.0
Protein (N X 6.25) .....	0.5
Lactose .....	0.6
Sodium benzoate .....	none
Glycerin derivative .....	0.4

Calories.—7.2 per gram; 204 per ounce.

Claims of Manufacturer.—For use as a bread spread and for cooking, baking and frying.

### BONNIE FARMS BRAND EVAPORATED MILK

Distributor.—United Fruit Stores, Providence, R. I.

Manufacturer.—Sheffield Condensed Milk Company, Inc., New York.

Description.—An unsweetened, sterilized evaporated milk, the same as Sheffield "Sealect" Brand Unsweetened Evaporated Milk (THE JOURNAL, Feb. 3, 1934, p. 373).

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 30, 1936

## THE PRESENT STATUS OF RHEUMATISM

The authors<sup>1</sup> of the second American review on the present status of knowledge of rheumatism and arthritis, prepared at the request of the American Committee for the Control of Rheumatism, point out that "rheumatism" was not considered to be a problem until, about twenty years ago, research in the field disclosed that a problem existed. Certainly it presents a social and economic problem as well as a medical one. Rheumatism, judging its incidence from the proportion of the population that actually complains of its symptoms, is twelve times as prevalent as cancer and one fortieth as fatal. The morbidity is 10 per cent among all persons who have passed the age of 40 years. The disease is more frequent among outdoor than among indoor workers, more prevalent in rural than in urban communities and twice as frequent among the poor as among the well-to-do. Yet it is possible that these factors of age and environment will become of subordinate importance as studies on the soil presented by the individual patient, and on the physiology of the joints, are prosecuted with greater industry.

The authors of the review are impatient with the too frequent new classifications of rheumatic disease—"classifications too often the 'arbeit' of one who feels that only thereby can he attain recognition as a specialist for rheumatism." They retain the classification employed in the previous review of rheumatic diseases: (1) those attributable to trauma, (2) those attributable to known infections, (3) those possibly or probably attributable to infection or related toxins, (4) those of which the chief characteristic is degenerative change in tissue, (5) those of which the chief or only obvious characteristic is some recognizable or suspected chemical derangement, and (6) a miscellaneous group of unclassifiable types. A survey based on this classification yields some evidence of progress in knowledge of arthritis.

1. Hench, P. S.; Bauer, Walter; Fletcher, A. A.; Ghrist, David; Hall, Francis, and White, T. P.: The Present Status of the Problem of "Rheumatism" and Arthritis; Review of American and English Literature for 1934, *Ann. Int. Med.* 9: 883 (Jan.) 1936.

Those physicians whose work impinges on industry will be interested in the statement that, in cases of chronic trauma to joints, symptoms may develop so slowly that their connection with the trauma may be overlooked and that well advanced articular lesions may remain symptomless until some unusual strain is experienced. Probably more distinct advances have been made in gonorrheal arthritis than in any other type of the disease. Aiding diagnosis of this condition, a new culture method for identification of *Neisseria gonorrhoeae* has been found more reliable than examination of smears; also, complement fixation methods are of value. In treatment, induction of fever (fever therapy) seems to be most satisfactory, both for the infection itself and for the joints.

General medical readers and sanitarians will be glad to know that the incidence of tuberculous arthritis is declining, partly because of certification of herds and pasteurization of milk. Trauma may be an inciting or precipitating factor of this disease, and roentgenograms do not give incontrovertible evidence in diagnosis. The most conservative treatment, all things considered, may be surgical operation in a great many cases. Tuberculous arthritis must not be confused with tuberculous rheumatism. The latter condition, if it exists at all, is thought to be attributable to a tuberculous toxin from some distant focus, a filtrable virus, an attenuated form of the bacilli of tuberculosis, or an allergic reaction.

In differential diagnosis it is necessary to avoid confusing rheumatic fever with the arthralgia of undulant fever and Haverhill fever or with erythema arthriticum epidemicum. Further evidence is recounted that rheumatic fever and rheumatic heart disease are influenced by environment; namely, that the incidence is low and the disease relatively mild in the tropics, that the incidence is higher in the temperate zones and among persons living near sea level or in basements and also that the incidence is higher in cold, damp months. This last observation doubtless will confirm the personal impression of many physicians.

According to the committee the two principal forms of chronic arthritis are (1) atrophic arthritis, which is to be considered synonymous with chronic infectious, proliferative, type one, synovial and rheumatoid arthritis, and (2) hypertrophic arthritis, synonymous with chronic senescent, degenerative, type two, chondro-osseous arthritis or osteo-arthritis. Substantially nothing has been added recently to knowledge of etiology or treatment of either disease. The only advance has been in tolerance of most writers for the views of others; this open-mindedness, in a field in which nobody knows much, is a necessary prerequisite to acquirement of knowledge.

From the frequent frank comments that the authors have inserted throughout their review, it is evident that the 400 articles read in a review of the literature for a single year was a far greater number than was justified by what most of the articles contained.



## THE ULTIMATE RESULTS OF OPERATIONS FOR INTRACRANIAL TUMORS

At Yale University School of Medicine, New Haven, there is now a collection of more than 2,000 brain tumors, together with microscopic preparations and clinical and follow-up records of the cases. This unique collection of specimens and records is a result of many years of surgical work and research carried on by Dr. Harvey Cushing at the Peter Bent Brigham Hospital in Boston. Recently about 50,000 pages of records that deal with these tumors were made by means of the Leica camera and cinema-film methods, and transferred to New Haven, with the permission of the Peter Bent Brigham Hospital Board. Thus there is available for study at Yale not only these tumors and their histologic preparations but the clinical records, the subsequent correspondence and the accounts of follow-up examinations of the patients, which continue to be added to the records as the years go by.

A former assistant resident surgeon<sup>1</sup> in Dr. Cushing's clinic recently came from England to study the ultimate results of operations performed during the year of his residency, which ended in September 1927. Three hundred and sixty-nine patients were admitted to the clinic in that year for symptoms suggesting intracranial tumor, and in 157 cases the tumor was verified histologically and classified. Contact has been maintained during subsequent years with the 135 patients who left the hospital alive. The manner of death of the seventy-two patients who have succumbed in the interval is known, and in some cases a necropsy was secured. The 135 patients send to the Brain Tumor Registry in New Haven an annual report of their condition and many of them return periodically for reexamination. This follow-up work continues to be under the direction of Dr. Louise Eisenhardt.

Cairns was especially interested in finding out how many of these patients were able to live useful lives following the operation. Obviously, in some patients irreparable damage had been done by the tumor before the operation was performed. The temperament of the patient and the pathologic type of the tumor also must be taken into consideration to assess the value of the operative treatment. There is fairly general agreement that histologic differences of intracranial tumors have clinical significance.

Among the 157 patients there were fifty-nine operated on who had gliomas; eight of these are still living seven or more years after the operation, and five of them are living useful lives. Dr. Eisenhardt adds the interesting fact that one patient operated on for glioma is still living more than twenty-six years after the operation.

Twenty-nine patients who had pituitary adenomas were operated on during the residency of Cairns; nineteen of these patients are living seven or more years after the operation, and ten of them are living useful

lives. The longest period of postoperative survival of a patient operated on for pituitary adenoma is now more than twenty-four years.

Thirty-one patients had meningioma; of these, eighteen are still living seven or more years after the operation and fourteen are living useful lives. The longest postoperative survival period in this group was more than twenty-five years.

In the group of 157 cases there were small numbers of cases of craniopharyngiomas, cholesteatomas, metastatic tumors and granulomas. Of eight patients with metastatic intracranial tumors operated on, not one was living seven years after the operation. The number of patients surviving seven or more years, however, totaled sixty-three, and thirty-seven of them were living useful lives. In other words, 40.1 per cent of the patients who left the hospital alive during the year of residency were still living after seven or more years, and 58.7 per cent of this group of sixty-three were living useful lives.

The glioblastoma multiforme is one of the most devastating of brain tumors. It grows rapidly in the white matter of the cerebrum and usually contains areas of necrosis and hemorrhage, and at times cysts. This tumor may appear at operation to be sharply defined from the surrounding white matter, but even after apparently complete removal it recurs in most cases. Among the cases studied by Cairns there were eight cases of glioblastoma multiforme and every one of these patients died, the average survival period from the time of operation being about six and a half months.

Another highly unfavorable type of tumor is the cerebellar medulloblastoma, which arises usually in the vermis of children and young adults. The diagnosis is rarely difficult, and at operation the tumor can apparently be shelled out completely. However, usually within a year this tumor recurs. Even then, radiation therapy will ameliorate the symptoms; but, as time goes on, irradiation ceases to give relief and the patient dies. There were five patients having cerebellar medulloblastomas, and all died on the average in thirteen months after operation. In the entire series of seventy cases of this tumor in the Brain Tumor Registry, there was one exceptional case in which the patient was living and well when last heard from seven years after the operation.

A few years ago, the location of the intracranial tumor influenced the longevity almost as much as did its pathologic nature. This is no longer true. Great advances have been made in the treatment of benign tumors of the midbrain and of the third and lateral ventricles. The most inaccessible location of a brain tumor at present, as far as unfavorable prognosis is concerned, and the site therefore of paramount importance, is within the corpus callosum, the basal ganglions, the midbrain, the pons or the medulla.

The chances of a useful survival for a period of seven to nine years for patients with verified intra-

1. Cairns, Hugh. The Ultimate Results of Operations for Intracranial Tumors, *Yale J Biol & Med* 8: 421 (Mar) 1936

cranial tumors who were operated on in this clinic in the year that ended in September 1927 were roughly one in four. These results are so good, Cairns said, that it is reasonably certain they do not represent the average of achievements in intracranial surgery in the world at large during that period. The ultimate results were influenced by the excellent clinic organization and by the judgment, experience and technical skill of the operating surgeon. There was little or no deliberate selection of cases for operation within the clinic, and the number of patients discharged from the hospital alive as cases of inoperable tumor was extremely small.

Van Wagenen,<sup>2</sup> another of Dr. Cushing's former resident physicians, made a similar study of patients operated on in 1924-1925. As time goes on, no doubt, studies will be made by others especially interested in the ultimate results of operations for intracranial tumors.

### DIET AND CANCER

Since the publication, more than twenty-five years ago, of Moreschi's<sup>1</sup> study of the effects of underfeeding in modifying the growth of tumor transplants in mice, many investigators have attempted to determine the possibilities. Even today, however, we continue to ask whether low calory intake can be relied on to delay growth of tumors, postpone the inevitable fatal end to which such growths lead, or retard or hinder the onset of malignant neoplasms that arise spontaneously. Many studies have been inconclusive because "controls" have been fed a diet without relation to that given to the experimental animals with which they have been compared. Indeed, the chief difficulties encountered in interpreting published results of researches on the relation of diet to cancer have been that more than one variable has been studied at a time. This error is illustrated by the common practice of restricting total food intake without making provision to avoid the resulting reduction to an inadequate level of such dietary essentials as, for instance, protein and mineral salts. By such oversight, obviously, there is imposed on experimental animals not only an insufficiency of food calories but also a restriction to a quantity of essential dietary constituents much less than that enjoyed by their controls. Moreover, genetic factors known to favor or limit takes of transplants often have been disregarded.

Besides underfeeding, many other phases of the possible modifying effects of diet on cancer have been investigated. Included among foods the effects of which on cancer have been studied are milk, bananas, tomatoes, liver, animal tissues, proteins, fats, carbohydrates, mineral salts and vitamins. Though the dietary field explored has been extensive, results

reported are chiefly unconvincing, owing in large part to such experimental irregularities as have been mentioned. In only a few instances have so-called synthetic diets been employed alike for control and for experimental animals, thus making it possible to study only one known factor at a time, which alone would make the difference between the diet given to controls and that supplied to their experimental mates.

The response of a host to growing tumor tissue that has arisen spontaneously is conceded to be different from that of an immune animal toward transplanted neoplasms. There is a distinct advantage then to cancer research and thus to the human cancer problem in the use of experimental animals with a high incidence of malignant tumors spontaneous in origin. The possibility that diet may have a beneficial influence in cancer is still unanswered. Dietary factors are worthy of investigation. They should be studied with the exacting technic used in modern nutritional investigations, employing animals of known genetic history, with a high susceptibility to spontaneous development of malignant tumors.

### Current Comment

#### THE EMASCULATED NEW FOOD AND DRUG BILL

Elsewhere in this issue we print an analysis<sup>1</sup> of the emasculated new pure food and drug bill which, it was contemplated many long months ago, would make good the deficiencies of the food and drug legislation of the first Rooseveltian era. The last thirty years has seen the rise of modern advertising methods that completely nullify the protection accorded the consumer by honesty on the label and package. Thus a modern bill must control advertising by mail, by billboards, in newspapers and magazines, and particularly over the radio. The bill first introduced has been subjected to a sort of plastic surgery in the legislative operating rooms which has resulted in a specimen not even resembling the original model and utterly deficient in many particulars. Altogether the result is an asthenic, chinless and impotent monstrosity. Formulas under this bill are secret and filed with the Department of Agriculture. Violations must be carried from the department into the Federal Trade Commission and the procedure is so long and wearisome and the penalties are so inadequate that the forces of quackdom may ravage the sick and ailing and retire with their booty long before the processes of investigation and prosecution catch up with them. This bill, so far from the ideal, might much better be scrapped and a new beginning be made when a more favorable opportunity offers. Perhaps the best procedure would still be to amend and strengthen the original pure food and drug legislation by taking account of the need for control over advertising, the great development of the cosmetic industry, and the newer social point of view which demands adequate protection of the uninformed consumer.

2. Van Wagenen, W. P.: Verified Brain Tumors: End Results of One Hundred and Forty-Nine Cases Eight Years After Operation, *J. A. M. A.* 102: 1454 (May 5) 1934.

1. Moreschi, C.: Beziehungen zwischen Ernährung und Tumorzustand, *Ztschr. f. Immunitätsforsch.* 2: 651, 1909.

1. Woodward, W. C.: Comments on the Copeland Food, Drugs, Therapeutic Device, and Cosmetic Bill, this issue, p. 1896.

# PROCEEDINGS OF THE KANSAS CITY SESSION

## MINUTES OF THE EIGHTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT KANSAS CITY, MAY 11-15, 1936

(Continued from page 1823)

### HOUSE OF DELEGATES

#### Second Meeting—Tuesday Morning, May 12

The House of Delegates was called to order at 9:45 a. m. by the Speaker, Dr. Nathan B. Van Etten.

#### Roll Call and Presentation of Minutes

The Secretary stated that more than a quorum was present. It was moved by Dr. Arthur J. Bedell, New York, seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried, that the House dispense with the roll call and with the reading of the minutes.

#### Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that thirteen delegates had been registered since the previous report of the Committee, making a total registration of 166.

The Speaker announced that the report would be received.

#### Report of Board of Trustees

Dr. Rock Sleyster, Chairman, presented the following report:

The Board of Trustees has considered the resolution concerning the scientific status of methods and the development of progress in air conditioning, introduced into the House of Delegates yesterday by Dr. Arthur J. Bedell, New York. It believes this matter is one worthy of investigation and will see that a committee is appointed for this purpose.

Dr. Arthur J. Bedell, New York, moved that the report be accepted. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

#### Supplementary Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following supplementary report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers:

During the past year sudden death has invaded the membership of the Judicial Council. On Sept. 13, 1935, Dr. Edwin P. Sloan of Illinois died of myocarditis. On Dec. 27, 1935, Dr. Emmett P. North of Missouri died of cerebral hemorrhage. Dr. Sloan was made a member of the Council in 1932 and Dr. North in 1934. Both of these men were valuable members of the Council, judicially minded, fair and interested in their duties. Dr. Lloyd Noland of Alabama was appointed by the President to fill the vacancy caused by the death of Dr. Edwin P. Sloan. The vacancy caused by the death of Dr. Emmett P. North has not been filled as yet.

There are at present several members of this Association who are either serving sentence for felonies or have recently terminated such sentence. Their names are carried as members in the American Medical Directory. This condition is brought about by county societies and state associations neglecting or refusing to expel such felons. The Judicial Council believes that the continuance of such men in membership, and the publication of their names as members in the American Medical Directory, are beneath the dignity of this Association and open the door to harmful criticism of the organized profession. The Council at the proper time will offer a suggested amendment to the Constitution to relieve the present situation.

The report of the Judicial Council to the House of Delegates last year said in part "It might be advisable to extend the origination of charges in some situations manifestly too great for the county society to handle to the state association and

possibly, in rare instances, to the national organization. There rarely would be infractions of such magnitude that the national association and seldom that the state association should be the originator of any action toward discipline. If and when the House of Delegates sees fit to extend original jurisdiction in matters of discipline to the national organization, the Judicial Council suggests that it should have the duties and powers now conferred on it, but it should not at any time be placed in an ex parte position. In those instances of abuse of such nature or such magnitude as to warrant national rather than state or county institution of proceedings, there should be some other body, either now in existence or created, to act as grand jury to investigate and, if deemed proper, prepare an indictment against the accused. In case of indictment, the Board of Trustees should assign the prosecution to some one of their choice and the case should be tried before the Judicial Council, which under such procedure would not be under suspicion of prejudice."

On recommendation of the reference committee to which the report was referred the Council was directed to "submit amendments to the Constitution and By-Laws of the Association as are necessary to secure the purposes sought." The Council has found such revision comparatively simple and will submit such amendments at the proper time.

At the last meeting of the House of Delegates at the last annual session of the Association, resolutions opposing acceptance of commissions and limiting the use of audiometers, presented by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, were referred to the Judicial Council with directions to prepare and present to the profession an interpretation meeting objections which were raised during discussion of the resolutions on the floor of the House.

Members of the Section on Laryngology, Otology and Rhinology in cooperation with the Judicial Council have drawn up a resolution which it is believed will meet general approval and will be presented to the House at a suitable time.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.

WALTER F. DONALDSON.

LOYD NOLAND.

JOHN H. O'SHEA.

#### Report of Judicial Council on Interpretation of Constitution and By-Laws

Dr. George Edward Follansbee, Chairman, asked Dr. John H. O'Shea, member of the Council, to present this report of the Judicial Council. Dr. O'Shea presented the following report:

The present situation is covered by Article 6, Section 2, of the Constitution, which provides that "These officers (general officers) shall be elected annually and, except the Trustees, shall serve for one year or until their successors are elected and installed"; and by Chapter IV, Section 8, of the By-Laws, which reads "The President shall be installed at the opening general meeting of the Scientific Assembly of the annual session following that at which he was elected." The language of the Constitution and By-Laws is mandatory, and no other sections apply.

Each member of the Judicial Council has profound sympathy with our President-Elect in his most unfortunate catastrophe and with his family and friends. It would be happy to find some way which would be practical and legal to advance the President-Elect to the Presidency at this time but it must admit failure under the present Constitution and By-Laws. It cannot

recommend to the House of Delegates any procedure which would evade or nullify the Constitution and By-Laws.

The Council, therefore, recommends that no action be taken by the House of Delegates and that the present President continue in office as provided in Article 6, Section 2, of the Constitution.

Dr. B. F. Bailey, Nebraska, moved that the recommendation of the Judicial Council be approved and adopted, and the motion was seconded by Dr. A. A. Walker, Alabama.

Dr. W. H. Seemann, Louisiana, offered as a substitute a motion to the effect that Dr. J. Tate Mason be installed as President at the Opening General Meeting on Tuesday, May 12, but accepted a suggestion offered by Dr. E. M. Palette, which was incorporated into the substitute motion, to the effect that Dr. J. Tate Mason be installed as President at the Opening General Meeting on Tuesday, May 12, in a manner prescribed by the Judicial Council. The substitute motion was seconded and carried.

#### Report of Reference Committee on Medical Education

Dr. George Blumer, Chairman, presented the following report:

##### REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

1. Your committee approves the general principle that physicians on the staffs of hospitals approved for intern training should be limited to members in good standing of their local county medical societies.
2. Your committee commends the activities of the Council on Medical Education and Hospitals in its attempt to improve the methods of administering the Principles of Medical Ethics in connection with the Judicial Council as discussed in paragraph 2 of its report.
3. Your committee wishes to emphasize the importance of the teaching of medical economics in medical schools and would also stress the necessity of deans of medical faculties developing in their teaching staff individuals especially competent for this purpose.
4. Your committee commends the activities of the Council in its survey of medical schools and bespeaks its continuance. The committee recognizes the magnitude of the task involved in the inspection of hospitals and urges continuance.
5. Your committee commends the plans for the study of graduate training of physicians in its various phases and regards graduate training as one of the most pressing problems facing the medical profession at the present time.
6. Your committee also commends the attention which the Council has given to the question of intern training and endorses the recommendations of the Council in this matter.

##### RESOLUTION ON ENTRANCE REQUIREMENTS TO MEDICAL COURSES OF EDUCATIONAL INSTITUTIONS

Your committee recommends the adoption of this resolution, realizing that the subject will require a great deal of additional study in order to arrive at satisfactory methods of administration.

##### SUPPLEMENTS TO THE REPORT OF THE COUNCIL ON MEDICAL EDUCATION ON SCHOOLS FOR LABORATORY TECHNICIANS AND FOR PHYSICAL THERAPY TECHNICIANS

Appreciating the necessity for the better training of technicians, your committee recommends to the Council continued consideration of the problem, believing that at all times the services of such medical helpers should be under the supervision and absolute control of the medical profession.

##### RESOLUTIONS REGARDING THE PRACTICE OF RADIOLOGY AND ITS DIVISION INTO PROFESSIONAL AND TECHNICAL SERVICES AND THE RESOLUTION REGARDING OTHER TECHNICAL AND PROFESSIONAL SERVICES

Your committee submits the following recommendations:

1. It reiterates the principle enunciated by the House of Delegates at Cleveland in 1934 "That the practice of radiology, whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine." The action of the House of

Delegates in 1925 establishing a section on radiology confirms this principle.

2. It further recommends that all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services.

Respectfully submitted,

J. F. SILER.

J. GURNEY TAYLOR.

GEORGE BLUMER, Chairman.

C. A. DUKES.

BEN R. MCCLELLAN.

On motions of Dr. Blumer, duly seconded and carried, the report was adopted section by section and as a whole, after discussion by members of the House.

#### Report of Reference Committee on Sections and Section Work

Dr. Arthur J. Bedell, Chairman, presented the following report:

*Mr. Speaker and Members of the House of Delegates:*

Your Reference Committee on Sections and Section Work has carefully read the published report of the Council on Scientific Assembly and heartily concurs in all the statements but is persuaded that the time has come to go into more detail concerning the volume of work done by this Council in the preparation of the annual programs. The activities of the Council constitute one of the most important functions of our organization. The published report of this Council in the Handbook is of necessity short and does not in any wise disclose the voluminous correspondence or reflect the keen sense of discretion exercised in the building of our scientific programs. An analysis, for instance, reveals that thirteen distinguished physicians will present papers in the general scientific meetings to be held Monday and Tuesday, May 11 and 12. This innovation of the past few years has proved of immense interest, as evidenced by the increasing attendance from year to year and the careful attention given by the listeners.

The section meetings have followed the usual plan and are so well staggered that those doing work in allied specialties can attend both morning and afternoon meetings. The program in its totality constitutes the most enlightening, comprehensive and desirable week of postgraduate instruction available to medical men anywhere in the world. Your committee, therefore, feels that the attention of our members should be drawn to the excellence of this week of medical education and that the constituent state associations should urge a larger percentage of their members to avail themselves of the privilege of attendance on the annual sessions.

The scientific exhibits make up one of the most interesting and instructive features of the annual programs. This year 170 scientific exhibits will be presented, affording a wealth of easily available information and susceptible of review within a brief space of time. This feature, taken with the scientific programs of the various sections, constitutes a combination which, for its appeal and scientific value, cannot be rivaled by any medical body at home or abroad. Your committee recommends that this type of program be continued.

The Council on Scientific Assembly presented a supplementary report bearing on the relation of blood grouping to paternity in which it stated that it had looked "into the question of blood grouping in establishing the paternity of a child, and it wishes to report at the present time that from its knowledge of this subject and a careful study of the literature it is not possible to state with any degree of certainty that the child is an offspring of a certain adult or that the latter is the father or mother of the child."

Your committee desires to commend the Council for its painstaking work and scientific approach to the answer sought and recommends that the matter be referred to the Board of Trustees for such further action as the wisdom of that body may dictate.

Your committee considered the following resolution presented by Dr. Albert Soiland, Section on Radiology, and adopted by the Section on Radiology at the 1935 meeting, as follows:

WHEREAS, The answers published in the Department of Queries and Minor Notes of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, being unsigned, are readily construed as representing the official opinion

of the American Medical Association, thus giving them a standing and authority which would otherwise not obtain; and

WHEREAS, The answers are obviously on occasion merely the expression of individual opinion and should be interpreted in the light of that fact; and

WHEREAS, Without such interpretation the answers are misleading and deceptive and capable of working a serious injustice to many who may hold opinions at variance with those expressed; therefore be it

Resolved, That the Section on Radiology of the American Medical Association recommends to the House of Delegates that appropriate steps be taken to make plain to the casual readers of THE JOURNAL the status of and responsibility for the answers published in the Department of Queries and Minor Notes.

Your committee is reliably informed that the Department of Queries and Minor Notes of THE JOURNAL is one of the most popular features of our official organ, eagerly consulted by the rank and file of our membership. Your committee is further informed that the answers to questions appearing in this section of THE JOURNAL are furnished by a group of outstanding men selected because of their familiarity with the particular problems raised by the questioner. Notwithstanding, your committee, after consultation with the Editor of THE JOURNAL, recommends that in the future there be inscribed at the head of this section of THE JOURNAL a statement setting forth that the answers given to the queries, although believed to be scientifically accurate, do not represent the consensus of opinion of any official body of the Association, unless so stated in the answer.

In closing this report, your committee, prompted by a desire to make possible a contribution to future programs, offers the following suggestion:

In spite of the implication in Section 13, Chapter XIV, of the Constitution and By-Laws, which reads as follows, "A Fellow shall present no more than one paper at any Scientific Assembly," a perusal of the program reveals occasional instances of repetition in the designation of one man to lead in the discussion of papers. Your committee believes this to be a violation of the spirit of the above section, which was evidently intended to enable the Council on Scientific Assembly to give the largest possible number of our members opportunity for appearance on the program. Your committee recommends that this section of the By-Laws be amended so as to preclude a continuance of this practice.

Finally, your committee desires to commend the Council on Scientific Assembly for having brought to this annual meeting the following distinguished foreign guests to address us: Lord Horder, London, England; Leon Asher, Bern, Switzerland, and Wolfgang Heubner, Berlin, Germany.

It is through the interchange of distinguished speakers with organized medical groups in our own and other countries that our membership is kept abreast of the development of world-wide medicine and is stimulated to renewed devotion to the traditional ideals of our profession. Your committee hopes to see this practice continued.

Respectfully submitted.

ARTHUR J. BEDELL, Chairman.  
CLYDE L. CUMMER.  
TOM B. THROCKMORTON.  
J. F. HASSIG.  
C. W. ROBERTS.

On motions of Dr. Bedell, duly seconded and carried, the report was adopted section by section and as a whole with the exception of that part which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

#### Report of Reference Committee on Reports of Officers

Dr. E. H. Cary, Chairman, presented the following report:

Your Reference Committee on Reports of Officers finds it a pleasure to review the observations of the officers and of the Judicial Council.

The President brings forcibly to our attention the political implications of social reforms, particularly as they affect the practice of medicine. Undoubtedly, the medical profession has been able as a united force to cause the American people to stop and consider any change affecting the practice of medicine. He calls your attention to the insidious invasion of private practice in the wake of so-called social reforms abroad and warns against the legislators' tendencies to exploit the needs of humanity.

He recognizes the fact that the members of this organization should be ever alert to continue to know the needs of the sick and aggressively meet our responsibility.

The observation of the President after two years of service is naturally of interest. Your committee notes his recognition of the cohesiveness of the medical profession and its loyalty to the American Medical Association. He raises many points of interest which will find a solution through education of both the medical profession and the public.

Not the least of the hazards attendant on new proposals for medical care may be those hastily arranged as temporary measures and submitted by the medical profession itself.

Undoubtedly the future of American medicine will depend on the type of men who are admitted to our medical schools. Safeguards of every kind should be utilized to protect medicine so that the untiring student shall also be deeply interested in his relationship to the members of his profession and the people.

Referring to the President's query about standardizing relationship of organized medicine and governmental agencies: Your committee would like to suggest that this question is pertinent at this time, owing to the provisions of the Social Security Act. While there is no disposition on the part of governmental agencies, medically supervised, to be arbitrary, it is of paramount interest to the medical profession to understand the implications involving the future practice of medicine. This requires immediate study on the part of constituent state associations who can intelligently act with the authorized agencies, particularly the state public health officer.

Your committee concurs with the beautiful sentiment about the President-Elect, Dr. J. Tate Mason, which our worthy President has expressed in the last paragraph of his address.

Referring to the address of the President-Elect, read by Dr. Brien T. King, Washington, it is of interest to note Dr. Mason's discovery that, although the economic situation was of supreme importance at every gathering of medical men, it was more surprising to find out how little the average physician knows of the operation of American Medical Association headquarters. Your committee earnestly recommends that the constituent state associations endeavor to familiarize their membership with these operations, whether this be by personal contacts, the printed word or the American Medical Association motion picture.

Your committee notes his analysis of medical thoughts on economic ills but feels that the unanimous opinion of this body has been adequately formulated at recent sessions. Attention has been wisely called to the advisability of deliberate consideration in these matters, adhering to tested principles which have been found most essential to the welfare of the physician and the patient.

It is a matter of sincere regret to the members of this committee and to the House of Delegates that illness has deprived Dr. Mason of the pleasure of attending this meeting, at which he was to assume the highest honor within the gift of the organization. Your committee sincerely hopes that he will soon recover and that the Association will again be blessed with his presence and his leadership.

Referring to the address of the Speaker, your committee welcomes the Speaker's charge to the members of this body. He emphasizes the importance of the duties of a delegate, his obligation to the American Medical Association and to the society which he represents. He also develops the need for deliberation on all matters presented. There is assurance of recognition so that democratic deliberation shall prevail. The encouragement given new members of this body to participate is particularly pleasing. Your committee endorses his comments on the part which the individual physician should play in civic affairs. The medical man who actively engages in the public life of his community not only serves the public well but advances the aims of organized medicine in an equally satisfactory manner.

The instructions to the delegates relative to the modus operandi of the House of Delegates are appreciated. Your committee approves in the interests of efficiency the appointment of a special committee for the executive session.

With respect to the address of the Vice President, your committee commends his recommendation that the members of the American Medical Association refer often to the early history

of the Association as recorded in the minutes of its formative period and is in accord with his observations that the founders of the Association were men of far seeing vision and that the spectacular development of the Association has been due, in large measure, to their wisdom in meeting many of the problems of their day—not so very different from some of the problems before the profession at the present time.

Relative to the Report of the Judicial Council, your committee notes that the recommendation of the Judicial Council at the last annual session suggesting a closer alliance between the Judicial Council and the Council on Medical Education and Hospitals has been complied with and that satisfaction has resulted from this cooperation.

Your committee approves the stand of the Council on the question of the right of osteopaths to admit patients to institutions in certain states and suggests that more aggressive action is demanded of the medical professions of those states lest the standards of medical practice be lowered.

While the patent situation is still unsatisfactory, your committee is pleased to note that this is the subject of continued study.

The importance of following established procedures in trials is properly reemphasized. Your committee thoroughly approves the recommendation that component societies take notice of this section of the report.

Your committee considers that the invasion by hospitals of the field of the practice of medicine should be condemned as a violation of the fundamental rights of physicians and that it demands militant opposition to the end that such activities cease.

Your committee scarcely feels it necessary to state its hearty endorsement of the Judicial Council's disapproval of all relationship between organized medicine and irregular practitioners and would like to call attention specifically to the second paragraph on page 147 of the Handbook and ask that the optometrists be included among irregular practitioners.

Respectfully submitted. E. H. CARY, Chairman.  
WILLIAM R. BROOKSHER. EDGAR A. HINES.  
WILLIAM A. ELLINGWOOD. EDWARD R. CUNIFFE.

On motions of Dr. Cary, duly seconded and carried, the report was adopted section by section and as a whole.

#### Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Frederic E. Sondern, Chairman, presented a partial report of the Reference Committee on Reports of Board of Trustees and Secretary. The complete report, together with the action thereon, will be found in the report of the reference committee at the Tuesday afternoon meeting of the House of Delegates.

#### Report of Reference Committee on Miscellaneous Business

Dr. H. A. Luce, Chairman, presented the following report:

Your committee has carefully considered the resolutions referred to it.

The resolution approved by the council of the Oregon State Medical Society and submitted by Dr. John H. Fitzgibbon, Oregon, is unanimously approved by your reference committee, and the reference committee further recommends that this action be transmitted to the Federal Radio Commission.

Your committee is in sympathy with the spirit and purpose of the resolutions introduced from the Arkansas Medical Society. Certain judicial interpretations of the ethical principles involved, however, lead your committee to believe that it would be a mistake to endorse these resolutions until such time as the Judicial Council can report on the matter. Your committee recommends that these resolutions be referred to the Judicial Council for report at its earliest convenience.

Your reference committee requests the privilege of reporting on the resolution, approved by the house of delegates of the Medical Society of the State of New York, relative to prevention of asphyxial death, at the Executive Session.

Respectively submitted. HENRY A. LUCE, Chairman.  
A. J. SCOTT. G. HENRY MUNDT.  
H. B. EVERETT. HARVEY B. STONE.

The report of the reference committee was adopted section by section and as a whole on motions of Dr. Luce, seconded and carried.

#### Report of Reference Committee on Legislation and Public Relations

Dr. R. L. Sensenich, Chairman, presented several sections of the report of the Reference Committee on Legislation and Public Relations. The entire report may be found in the report of the reference committee at the Tuesday afternoon meeting of the House.

#### Address of Lord Horder

Lord Horder of England was escorted to the platform and introduced by the Speaker. He addressed the House as follows:

*Mr. President, Mr. Speaker, and Gentlemen, Delegates:*

I don't propose to interrupt your business for more than a few minutes. I am impressed by the compliment you have paid me, Mr. President and Mr. Speaker, of being asked to come here at all, because I realize that I am under very strict surveillance in this room—I was led by arm to the rostrum and I have no doubt I will be led back. I understand that my guide and friend was a Colonel during the war. I reminded him that there was not at the moment a war on, and, therefore, we were free citizens.

I have a message from the sister society, my own British Medical Association, and it was thought by your President that this evening might be rather a crowded occasion and not perhaps so fit as this to read you this message of greeting. It is in effect a personal letter from Dr. Anderson, our Medical Secretary, to myself.

Dear Lord Horder:

The Council at its meeting on the 8th of April had before it an invitation from the American Medical Association to appoint a delegate to the annual convention of that body to be held in Kansas City, from May 11 to 15, 1936, and I was requested to ask if you would honor the Association by acting in this capacity.

There is no specific function attaching to the appointment, but the Council would be grateful if you would take a suitable opportunity during the proceedings of the meeting to convey its greetings to the American Medical Association, its cordial good wishes for the continued success and prosperity of that body, and its appreciation of the many acts of kindness extended in the past to members of the British Medical Association, particularly on the occasion of the visit of the party which crossed America en route to the Annual Meeting of the British Medical Association in Melbourne, Australia, in September 1935.

Yours sincerely,

G. C. ANDERSON.

As a matter of fact, Mr. President, before I am conducted from this hall, might I add a few personal words? I will be extremely careful and tactful. These are just a few impressions that I have made and they have not been abetted by any one, so I regard this trust and confidence as being again a great compliment.

I think of the things I might say, gentlemen, but from my experience during the past three weeks, I find it safer not to say. But I want quite frankly to tell you, if you will credit me with being observant, that I am very greatly impressed by this gathering and the function that I know it serves, as I was in New York when I was paid a similar compliment and asked to attend one of the meetings of the house of delegates in the Medical Society of the State of New York. You see why I am so interested, not to say thrilled, is that we have no parliament within our profession as you have. That perhaps has some advantages; I am quite sure it has great disadvantages. I am one of those who hold that a profession can discipline and govern itself very much better than it can be either disciplined or governed from outside. In my country the legal profession does discipline and govern itself as you do in medicine here. We are both disciplined and educated, I may say, and governed by a statutory body, which although it has considerable medical representation is not per se a medical body at all but a legal body; it is what we call a committee of the Privy Council.

So that although we have a court of conduct here and there, the College of Physicians, the College of Surgeons, they are in effect courts of conduct, but they have no power. The power, following on any view that we may take in our col-



leges, on some ethical point, is entirely outside our own profession.

You have a great advantage, if I may say so, but then it is obvious, it only needs saying rather than emphasizing, all the more care surely must be exercised that you give it public confidence. I won't say that our statutory body, the General Medical Council, gives the public very much confidence, but when the public loses confidence, at most it loses confidence in a quasipolitical body and not in our profession.

You have quite clearly to be rigidly representative, you have to get all the wisdom available, and I have noted with some interest the great amount of time and care and devotion given by what I may call perhaps without the slightest offense but rather as a tribute the elder statesmen in the medical profession over here, with, as I see, yes I see a sprinkling of those who are still in their salad days.

I don't want to digress, and I told you I wouldn't take your time, but the public doesn't distinguish as we must distinguish between the opportunism of the politician and the permanent, basic, deep principles that underlie our work. Now, it is a rather delicate thing to suggest that at home, although our politicians are opportunists, as every politician is, still our system is perhaps a little more closely allied to mass public opinion, and there is a very great tendency before any radical change is made in matters medical in Great Britain, there is increasing tendency to submit any moot point to bodies which are really in effect medical.

It is true that at the head of the Ministry of Health there is a politician, but after all the man with power in the Ministry of Health is the chief medical officer, and the association and the colleges have considerable power, and I can't conceive any measure of a medicopolitical kind going through our houses of parliament that had not been submitted to all those bodies for criticism. I don't think it would get support if it had not gone to those bodies. But my point, you see, is, as I said, that it would never do to have our system of education, our code of ethics, follow the ebb and flow, or is it an ebb and flow so much as a hectic change that we see in politics, so there must be some big basic principle which is carried on by such a body as yours.

The curriculum I have not had time to go into. Our General Medical Council supervises the curriculum and supervises the examination. We do, of course, the teaching, and we do the examining, but the standard is maintained by the General Medical Council, and that makes it again a lessening of our responsibility, and *per contra* it increases yours, because I suppose that you are responsible for the standard of teaching and the standard of examination which puts a man on the registry.

I think that is all I have to say, because it is quite clear to me your problems are not as simple as ours; your problems inside the profession, of course your problems outside the profession, are so vastly complex that it would be very unwise to say anything except those rather fundamental points that I have touched on.

I think forbearance is my best contribution after what I have said, Mr. President, and I want to thank you once more. Many of you have become, I feel, friends, and to thank you seems almost unnecessary.

#### Remarks of President James S. McLester

Lord Horder, you have honored us greatly by journeying to America to attend this meeting, and we have enjoyed very much having you here. Not only have you added to our pleasure, but you have contributed very much to the intellectuality of our body.

As expressing what we in America think of you of the great British commonwealth of nations, I want to tell you a little personal incident. Immediately after the Great War, I was in the Canal Zone inspecting the fortifications there, and as I had seen the fortifications both on the Pacific and on the Atlantic side I commented to my friend on the fact that the Pacific side was so much better fortified than the Atlantic side, and asked him why. "Well," he said, "eventually we will have the Atlantic side equally well fortified, but you must remember on the Atlantic side we always have the British."

#### Address of Dr. T. C. Routley

The Speaker presented Dr. T. C. Routley, who addressed the House as follows:

*Mr. Speaker, Mr. President, Ladies and Gentlemen:*

I am conscious of the fact that the warmth and cordiality of your welcome is not directed to me solely but through me to the sister society which lies to the north of you.

It has been my very good fortune to have attended your meetings now for a period of thirteen years. I don't know how many years one has to cover a road before he owns it. In our country, if you go across a path for twenty-one years and it has never been barricaded, it is then called common property, so perhaps if you allow me to come for eight more years, I may then be qualified to be a member of your Association.

There are two or three observations which perhaps you will permit me to make. In the first place, I would like to be personal for a moment if I may and say through you to your officers, particularly to my colleague Dr. Olin West, how deeply we in Canada appreciate the services rendered to us at any and all times. Because of your great size and your great development, you have facilities in your organization which of course we in Canada have not, but whenever it is my duty to find out something or to help somebody and we haven't that information in Canada, a word to Olin West brings a reply, and I do want to thank him for that.

The association which I represent desires me to say to you how deeply we appreciated your hospitality last year. Of course we were lost numerically in that great gathering in Atlantic City, but I will assure you that as far as we were concerned ourselves we didn't feel lost, we had a marvelously fine time, it was a great opportunity for us, and we do thank you, Mr. Speaker, Mr. President, and House of Delegates, and the great association which you represent, for the privilege of having that joint meeting.

We in turn feel that it would be a great honor indeed to us if at some early future date you would come back to us. Now, there may be great difficulties in the way of your doing that. On those points, of course, I have nothing to say, and they will be problems which you yourselves will deal with as you see fit. However, if those difficulties can be surmounted, we in Canada having canvassed the situation have determined that if you can come we would like you to come and meet with us in the city of Toronto. I am sure many of you know it; it is a city of 700,000 people, and we feel that it has adequate facilities for convention purposes, and I was instructed to bring to you not only an invitation from the Canadian Medical Association but from the provincial association in the province of Ontario and from the local medical society, the Academy of Medicine of Toronto, a society with 900 fellows.

We believe that we could give you a good time and that you in turn would bring much to us. We hear many things these days about unrest in the world, about national and international problems. What group is there in the world to whom man may look with more hope of success than asking the medical profession to give leadership to the world problems? Who is there that enjoys the confidence of his fellow man so much as the doctor? So it seems to me, Mr. Speaker, that the more and more we in medicine find it possible to get together nationally, internationally, yes, and in a world-wide fashion, if that were possible, the more we shall lighten the load, and by that we can hope that those intercourses will do a great deal to bring the world from chaos to cosmos and to give common people a chance to believe that the world is not going to the dogs.

I do not wish to take up further of your time, but in sitting down again perhaps you will let me say how deeply we in Canada appreciate your friendship, not only medically but nationally and in every other way, and we trust that in the not far distant future you will give us the great joy of entertaining you within our own shores.

#### Remarks of President James S. McLester

Dr. Routley, we too deeply appreciate your friendship. You and your colleagues made the Atlantic City meeting for us, and we shall always remember it with a great deal of pleasure.

**Message to Dr. J. Tate Mason**

It was moved by Dr. A. A. Ross, Texas, seconded by Dr. J. W. Burns, Texas, and carried, that the Secretary send to Dr. J. Tate Mason a message of the affectionate regard of American medicine and convey to him information of what has been done, extending to him the sympathetic consideration of the House for his condition.

The House recessed at 12:25 p. m., to reconvene at 1:15.

**Tuesday Afternoon, May 12**

The House of Delegates was called to order at 1:40 p. m. by the Speaker, Dr. N. B. Van Etten.

**Report of the Reference Committee on Legislation and Public Relations**

Dr. R. L. Sensenich, Chairman, presented the remainder of the report of the Committee. The report, including those sections that were presented Tuesday morning, follows:

Your Reference Committee on Legislation and Public Relations submits the following report:

That portion of the report of the Board of Trustees giving account of the activities of the Bureau of Legal Medicine and Legislation and the Bureau of Medical Economics was referred to this committee.

The report is printed in the Handbook and as it comprises thirty-three pages it is not practical to reread the report before the House. Attention will, however, be directed by page and paragraph subheading, as the report of your committee is read.

**REPORT OF BUREAU OF LEGAL MEDICINE AND LEGISLATION**

Page 66 of the Handbook, "Social Security Act": Your reference committee calls attention especially to the suggestion that the medical profession cooperate in good faith in carrying out the provisions of this act. Your committee, however, wishes to emphasize the fact that the basic requirements of federal legislation are so broad as to permit the creation within the state social legislative structure of conditions which may be very difficult of administration in a manner acceptable to physicians if the local profession does not participate in the organization of the state structure.

Page 66 of the Handbook, "Food, Drugs, Devices and Cosmetics Legislation": The committee commends the Bureau of Legal Medicine and Legislation for its activity in the interest of an effective food and drug act and wishes to point out to the members of the House of Delegates and to the constituent associations that if and when a satisfactory bill is presented to the Congress, the medical profession should exert every effort to secure its enactment.

Pages 67 and 68 of the Handbook, "Medical and Hospital Care for Employees on Emergency Relief Rolls": Reference is made to failure to provide medical and hospital service for those receiving insufficient wages to pay for such service, when employed in the Works Progress Administration. A similar situation is reported to have arisen in connection with the activities of the Rural Resettlement Administration. Your committee wishes to point out that while in many states emergency relief officers and supervisors of the poor have declined to assume responsibility for medical relief to individuals so employed, there has recently been a tendency to relax this restriction and recognize the responsibility to provide medical service at public expense for those not receiving a sufficient government wage to provide for themselves.

Pages 68 and 69 of the Handbook, "Veterans' Legislation": Your committee wishes to direct attention especially to the report that no legislation is being pressed for by the Veterans' Bureau or American Legion proposing the enlargement of the privileges of veterans with respect to medical care and hospitalization.

Page 69 of the Handbook, "Reserve Officers' Training Corps": Your committee wishes to add that since the report of the Bureau of Legal Medicine and Legislation was written the Congress has approved bill 1937 and the continuance of medical units in the Reserve Officers' Training Corps is assured for the present, at least.

Page 69 of the Handbook, "Reorganization of Federal Narcotic Service": Your committee finds nothing in the proposed reorganization of the federal narcotic service which would justify the profession in opposing the enactment of this bill.

Page 70 of the Handbook, "Contract Surgeons of the Spanish-American War": Your committee notes that the Bureau of Legal Medicine and Legislation has been persistently active in its efforts to secure legislation providing benefits for contract surgeons of the Spanish-American War. Your committee wishes to add that, while it is apparently impossible to secure such legislation at the present time, the statement that "The beneficiaries of such proposed legislation are not organized and vocal" makes it particularly desirable that the Bureau should continue its interests and activity in this particular matter in the hope that at some future time desirable legislation may be secured.

Page 70 of the Handbook, "Investigation of Silicosis and Other Occupational Diseases": Your committee wishes to point out that the creation of multiple nonmedical agencies for the study of industrial health conditions is not desirable or acceptable to the medical profession. Organized medicine should insist that medical functions be performed by medical men under medical supervision.

Page 71 of the Handbook, "Birth Control Legislation": As this subject is being considered by a special committee, your reference committee will make no comment.

Page 71 of the Handbook, "State Legislation": Your committee wishes to commend especially the Bureau of Legal Medicine and Legislation for assistance given the various constituent state associations in analysis of proposed legislation and assistance in opposing harmful measures. No legislation establishing systems of compulsory state health insurance have been enacted in any of the states.

Page 71 of the Handbook, "Professional Use of Narcotic Drugs": Your committee calls attention to the fact that there seems to be a distinct advantage in the enactment of uniform state narcotic drug acts, as facilitating the enforcement of necessary regulations. Your committee further recommends the inclusion of regulations in control of the production, preparation and distribution of cannabis and the prohibition of the sale of barbituric acid, compounds and derivatives, dinitrophenol and other substances peculiarly potent for harm when self administered. It is recommended that they be sold only on the prescription of licensed physicians, dentists or veterinarians.

Page 73 of the Handbook, in the second paragraph of "Laws Relating to the Practice of the Healing Art": Your committee directs attention to the fact that other states than the one named have enacted physicians' lien laws which have apparently operated in a satisfactory manner with reported benefits to the profession and without injustice to the patient.

The third paragraph, relating to the report by physicians of gunshot and other wounds: Your committee recommends that, where legislation is enacted by which gunshot and other wounds are made reportable by physicians, the medical profession should insist that the same requirements be imposed on every other person having knowledge of the wound and the possible conditions under which it was inflicted.

Your committee further recommends that the American Medical Association go on record as condemning the practice of performing operations designed to alter the appearance so as to conceal the identity of the individual.

Page 73 of the Handbook, "Hospital Service Corporations": As this matter is under special study of the Bureau of Medical Economics, your reference committee will have no further comment.

Page 73 of the Handbook, "Workmens' Compensation": Your committee points out that the regulations governing the selection for a physician to care for an injured employee, as well as the establishment of fee schedules, and the definition of compensable occupational diseases, vary so greatly in the different states that the whole matter will require additional study and some judicial rulings before any uniformity is possible. Those physicians having the treatment of employees injured or suffering from occupational disease should offer their experience as a guide in formulating regulations.

Page 74 of the Handbook, "United States Department of Health": The Bureau of Legal Medicine and Legislation describes the organization setup of various national health activities. The Committee on Legislative Activities will, in its report, transmit the results at a recent conference with the chairman of the special Senate committee investigating executive agencies of the government, with a view to their coordination, as described in the second paragraph on page 75. Your committee wishes to direct especial attention to the first paragraph on page 77, which in summary states that it is believed to be inexpedient for the American Medical Association to seek the establishment now of a United States department of health with a cabinet officer at its head.

Page 77 of the Handbook, "Integration of the Medical Profession": As it is understood that the Board of Trustees has in hand a study of this subject and may possibly report in greater detail than herein set forth, your committee will not comment.

Page 79 of the Handbook, "Cooperation with State and County Associations": The report of the Bureau of Legal Medicine and Legislation herein raises a very important question as to the advisability of carrying on all consultation and correspondence directed to the Bureau of Legal Medicine and Legislation through the offices of the constituent state associations. The question of the facility of this plan would depend very much on the willingness and capacity of the organization of the constituent state associations to care for the additional matter which would pass through their respective offices. Your committee recommends that this subject be brought up for discussion at the next meeting of the Conference of Secretaries of Constituent State Medical Associations in order that it may be given a more thorough discussion.

#### REPORT OF BUREAU OF MEDICAL ECONOMICS

Your committee commends the Bureau of Medical Economics for its continued study of those problems incident to the various experimental plans for the distribution of medical care. The reports of these studies have been from time to time made available to the membership of the American Medical Association, and time would not permit of any detailed discussion here. Your committee directs attention to the fact that the most important studies are still to come and that much will depend on a careful evaluation of these methods and the measure of success attained after a sufficient period of operation. The multiplication of units of unsound principle and faulty organization will not contribute anything to the development of a better method. Your committee would therefore recommend that before any new experimental units are established the situation be sufficiently studied. It is no doubt needless to remind that in considering any proposals certain basic requirements have already been set up by the American Medical Association.

Page 88 of the Handbook, "Medical Relations Under Workmen's Compensation" and "Care of the Indigent Sick": As these matters are so widely at variance in the respective states and are undergoing constant change, repeated revision of the information at hand in the Bureau office is necessary in order that information may be of value.

Page 89 of the Handbook, "University and College Student Health Service": Reference is made to the study of Student Health Services in all the leading colleges of the United States by the Bureau of Medical Economics. This study includes 238 colleges and universities and seventeen colleges for Negroes. Your committee calls attention to the several features of Student Health Service as enumerated on page 90 of the Handbook. Item 6, which reads "It appears that a very large percentage of universities and colleges are actually engaged in the practice of medicine in varying degrees" is of especial interest. No figures are given as to the average charge, if any, to the student for that service. There is no suggestion as to whether or not there may be a substantial item in the amount of tuition charged which is allocated to the medical care of students. There is no information to indicate that the university takes into account capital invested in buildings and equipment devoted to the medical service for the students, or part-time service for additional personnel required in keeping accounts and other things incident to the operation of such service. Your committee

therefore suggests that if possible a cooperation of some of these institutions should be secured for the purpose of securing a fair appraisal of the cost of the service to the student and to the taxpayer and from allocation of endowment funds. If, as indicated, there is a tendency to the creation of additional institutional patterns of health service it would be well for everybody concerned to know the cost of that service.

Page 91 of the Handbook, "Group Hospitalization": There is much reason to suggest caution. This study is still under way. Your attention is respectfully called to the last paragraph on page 94, in which it is stated "Returns to date suggest that the importance of group hospitalization plans has been overstated when measured by the actual number of plans in operation and the number of members enrolled." The absence of accurate financial and actuarial data is emphasized by your committee. The suggestion is made that if these various plans were forced to comply with the principles of insurance laws in the respective states a desirable measure would be provided for safety for the insured and prevent an unfavorable reflection on physicians who, in some instances, are actively favoring the establishment of unsound or insufficiently tried plans.

Page 95 of the Handbook, "Relation of Medical Ethics and Medical Economics": It is unfortunate that this material is not completed and ready for distribution at this time. Your committee commends this effort on the part of the Bureau of Medical Economics to call attention to the economic implications in the Principles of Medical Ethics. Although it is not stated that the Judicial Council has officially construed the various rules referred to in this discussion of the Principles of Medical Ethics, the committee understands that great care has been taken and advice has been had from the Council in determining that the implications set forth are sound in basis. Your committee recommends that as soon as this material is available it shall have broad distribution and shall be given study in the various component county societies, where the responsibility for the enforcement of ethical principles must reside. It must be recognized that unfair economic practice reflects on all and should be just as much a matter of interest to the component society as is other unethical practice.

The activity of the Bureau of Medical Economics in the debate on state medicine is familiar to every delegate and the Bureau deserves the recognition and appreciation of the medical profession for its efforts in the interests of the profession. The proposed program of the Bureau as set forth on page 98 of the Handbook comprises a number of items, each one of which is of much importance. A consideration of the character of the material to be studied indicates the necessity for constant study, analysis and revision, in order that conclusions by which the profession is to be guided may be dependable.

Respectfully submitted.

R. L. SENSENICH, Chairman.  
A. C. MORGAN.  
C. J. WHALEN.  
J. H. IRVIN.  
E. N. ROBERTS.

On motions of Dr. Sensenich, seconded and carried, the report of the reference committee was adopted section by section and as a whole.

#### Executive Session—Tuesday Afternoon, May 12

It was moved by Dr. W. H. Seemann, Louisiana, that the House go into Executive Session, the membership to consist of duly accredited Delegates, the general officers, past and present, the presidents and secretaries of constituent associations and component societies, and the chairman of the Committee to Study Contraceptive Practices and Related Problems, as well as the Invited Guests. The motion was seconded by Dr. Walter E. Vest, West Virginia, and carried.

On motion of Dr. H. A. Luce, Michigan, seconded by Dr. C. S. Gorsline, Michigan, and carried, the courtesy of attendance at the Executive Session was extended to the president-elect of the Wayne County Medical Society.

The Sergeants-at-Arms polled the House, after which the House went into Executive Session.

### Report of Reference Committee on Miscellaneous Business

Dr. H. A. Luce, Chairman, presented the following report:

Your committee considered the resolution dealing with asphyxial deaths, which was introduced by Dr. Frederic E. Sondern, New York, at the request of the Medical Society of the State of New York.

Your committee endorsed the aims and purposes of the Society for the Prevention of Asphyxial Deaths but felt that this resolution gives undue prominence to the subject of deaths from the proper and necessary administration of anesthetics in the rendering of medical and surgical services. It therefore deletes that portion of the resolution embodied in the last whereas.

This deletion is recommended because of the possible interpretation that anesthetic deaths are entirely asphyxial deaths, which is obviously untrue. This interpretation might have the effect of justifying persons in their opinion who are opposed to anesthesia as well as its possible use to further actions for malpractice against members of the medical profession.

With this deletion, the resolution reads:

WHEREAS, The aims and purposes of the Society for the Prevention of Asphyxial Death were approved by the Medical Society of the State of New York, May 14, 1934,

WHEREAS, These aims and purposes were later approved by the House of Delegates of the American Medical Association, June 12, 1934,

WHEREAS, The Society for the Prevention of Asphyxial Death was invited by the Committee on Scientific Exhibit of the American Medical Association to prepare an exhibit for the regular meeting of the American Medical Association, which was held at Atlantic City in June 1935,

WHEREAS, The Scientific Exhibit of the American Medical Association subsidized space for eight booths on the Prevention of Asphyxial Death at this exhibit;

WHEREAS, A favorable impression was created by this exhibit, and the need for an organized movement to prevent asphyxial death was emphasized,

WHEREAS, It has been satisfactorily established that asphyxiation constitutes a major medical problem, representing a mortality of at least 50,000 deaths a year, therefore be it

Resolved, That the House of Delegates of the American Medical Association, at the Kansas City session to be held in May 1936, be petitioned to create a Committee on Asphyxia for the further study of this problem.

With this deletion your committee approves the resolution and recommends its adoption.

Respectfully submitted.

HENRY A. LUCE, Chairman.  
A. J. SCOTT.  
H. B. EVERETT.  
G. HENRY MUNDT.  
HARVEY B. STONE.

It was moved by Dr. R. L. Sensenich, Indiana, seconded by Dr. A. J. Scott, California, and carried, that the report of the Reference Committee on Miscellaneous Business be adopted.

### Committee on Publicity

The Chairman, without objection from the House, appointed the following Committee on Publicity: Dr. Holman Taylor, Texas; Dr. Edgar A. Hines, South Carolina, and Dr. Joseph F. Burnham, Massachusetts, to cooperate with the Editor, Dr. Morris Fishbein.

### Report of Reference Committee on Executive Session

Dr. C. E. Mongan, Chairman, presented the following report:

1. The memorandum from the Bureau of Legal Medicine and Legislation concerning the proposed omission of the item referring to legitimacy and illegitimacy from standard forms for reports of births and stillbirths was not approved. Your committee considered that this was a legal and sociological rather than a medical question.

2. The resolution from the Oregon State Medical Society, asking that the Council on Medical Education and Hospitals withdraw approval from those hospitals which grant special privileges to any of their staff members in the form of lower rates for patients of such staff members, was approved.

3. The resolution from the California Medical Association found on page 38 of the Handbook for delegates was referred to the Reference Committee on Medical Education.

4. Your committee had before it the following report:

### REPORT OF COMMITTEE TO STUDY CONTRACEPTIVE PRACTICES AND RELATED PROBLEMS

Your committee appointed by the Board of Trustees of the American Medical Association in accordance with the resolutions passed by the House of Delegates on June 11, 1935, submits the following report, based on its interpretation of the resolutions.

Contraception as a means of birth control is widely employed. It has been kept before the general public during more recent years by well organized propagandists. From time to time the organized medical profession has been criticized for not giving general attention to the movement. Your committee has reviewed a large amount of the available literature in an effort to secure adequate information on which to evaluate a situation which has far reaching possibilities for good or harm on the future of the human race. Early in this study it became evident that most people, including physicians, are relatively uninformed regarding the entire subject other than as it may be applicable to the family problems of certain individuals. Your committee has deemed it advisable to examine some of the claims which have been made concerning the general use of contraceptives as well as the acceptable medical indications and the possible dangers associated with the present approach to this subject.

### THE PROBLEM OF OVERPOPULATION IN THE WESTERN WORLD

Desire on the part of the human animal to avoid conception as a natural consequence of coitus dates back to antiquity. Propaganda for birth control, based on a growing fear that the world may become overpopulated, started after the formulation of the malthusian theory and still continues. It seemed advisable for the committee to consider available evidence regarding present trends of the white population of the world. Fortunately, several authoritative studies are available.

East, in "Mankind at the Crossroads" published in 1923, in his conclusions states: "If the human race really desires a continued progress, a fair chance, and a longer and happier life for every individual, the birth rate must come down faster and faster; and it must come down throughout the whole population and not merely within the one section which furnishes those of greatest social worth. To accomplish this, parentage must not be haphazard."

Huntington and Whitney, in "The Builders of America," published in 1927, confirm East's observation that race suicide is already the rule among the educated part of our population.

The Brookings Institute published in 1928 and 1931 two extensive studies of "The Balance of Births and Deaths" in Europe. The findings reported in 1928 are briefly summarized as follows: "According to the fertility and mortality rates in western and northern Europe in 1926, 100 mothers gave birth to 93 future mothers only. With the fertility of 1926 the population is bound to die out unless mortality of potential mothers decreases beyond reasonable expectations. And the fertility continued its downward path in 1927." In the director's preface to the 1931 report he says: "This second volume shows that similar conditions prevail in some countries of Central Europe, like Austria, Estonia and Latvia. In other countries, for instance, Italy and Poland, the population is growing, but at a slower rate than in former times since fertility has decreased much more than mortality. The only European country which has a genuine increase of over one per cent—as a matter of fact almost two per cent—is Russia. . . . The earlier volume showed that there is no foundation for the general belief that the decrease of fertility in western and northern Europe was offset by a decrease of mortality. In this volume we see that there is no foundation for the general belief that the decrease of fertility is confined to the nations of the Western civilization."

Lorimer and Osborn, in their "Dynamics of Population," published in 1934, state in their conclusions: "It is impossible to make reliable long time pronouncements about the future total population of the United States. But there can be no doubt that the period of rapid natural increase is now coming to an end. . . . Population trends have run their course in the past with little attention by any one to their momentous influence on human destiny. Variations in fertility, although controlled by individuals, are indirectly determined by particular social factors. It is evident that the social conditions which affect reproduction might be modified in a number of ways, so that the dynamic influences of population change would be more in line with conscious social objectives. Eventually, if our dream of human progress is to be realized, rational social action must replace the operation of blind forces in this as in other fields. In the furtherance of this ideal there is need both for more exact science and for a larger appreciation of the possibilities and values of life."

#### EUGENIC CONSIDERATIONS

Our present knowledge regarding human heredity is so limited that there appears to be very little scientific basis to justify limitation of conception for eugenic reasons. However, it is recognized that there are a few congenitally transmissible diseases, for instance oxycephaly, Huntington's chorea, hereditary optic atrophy, otosclerosis, and familial cases of Friedreich's ataxia. There is conflicting evidence regarding the transmissibility of epilepsy and mental disorders.

No evidence was found which would indicate that wider dissemination of contraceptive information would tend to establish a better social and economic equilibrium in society. At present the part of our population with the best education and presumably the most competent socially and economically is not reproducing itself. Birth control propaganda is partially responsible for this condition.

#### ECONOMIC CONSIDERATIONS

Your committee has found no evidence available to justify the broad claim that dissemination of contraceptive information will improve the economic status of the lower income groups, although it is admitted that some individuals might thus profit by limitation of their family. Your committee knows of no type of contraception which is reasonably adequate and effective for a large portion of the population.

#### MORAL CONSIDERATIONS

Coitus is accepted as a normal marital function, but differences in opinion arise as to methods of preventing conception. Apparently there is no moral objection to selection of the assumed nonfertile portion of the month for coitus by married couples.

#### MEDICAL CONSIDERATIONS

Your committee recognizes that voluntary limitation of conception may be necessary to safeguard the health of some women. Pregnancy is medically undesirable, and may be actually dangerous for the woman who has active tuberculosis, acute or chronic nephritis, some types of heart disease, some psychopathic conditions including recurring puerperal insanity, arteriolar sclerosis, chorea, some types of anemia, especially pernicious anemia, malignant diseases (including the hematopoietic), polyneuritis, recent major surgical or obstetric operations, recent serious illness, phlebitis, recent pelvic infection, pyelitis, traumatic rupture of the symphysis or pelvis which has not healed, and possibly a few other conditions in women who may not be naturally physically capable. However, it must be recognized that the capacity of women to bear children without impairment to health is an individual matter and varies to such a degree that no general rules can be offered here.

Marriage of individuals who have mental or physical abnormalities which contraindicate reproduction ordinarily should be discouraged.

There has been an extensive development of preparations and devices for preventing pregnancy. Some of these are

more or less physically harmless, some are relatively effective when used intelligently, others have little or no value. All mechanical devices which are introduced into the cervix or corpus uteri are potentially dangerous to the life and health of the woman. Many deaths and an even larger number of serious pelvic complications have been reported in the literature, and the members of the committee have knowledge of many unreported cases of serious illness from the use of intra-uterine devices. There are available several publications offering scientific evaluation of the effectiveness of various contraceptives. No contraceptive technique other than actual continence is intrinsically 100 per cent safe. The efficiency of all present methods depends on intelligent use. None are dependable for couples who are intoxicated, subnormal or lacking in self control. There is evidence that many women who have abortions performed are familiar with contraceptive measures but seek an abortion when the method fails.

The committee has been unable to find evidence that existing laws, federal or state, have interfered with any medical advice which a physician has felt called on to furnish his patients. Clarification of such laws, however, is desirable. The committee suggests the advisability of legislation to standardize and control the manufacture and distribution of contraceptive materials.

The members of your committee do not favor independent so-called birth control clinics, believing that needed contraceptive advice should be a matter for proper medical decision in the care of individual women. Furthermore, a physician who for other than medical reasons considers it improper to give any information or advice that might aid his patient to practice contraception should not be criticized because he refuses to furnish such information or advice even when from a medical standpoint pregnancy is contraindicated. In the opinion of your committee, however, such a physician should not dissuade a patient from obtaining contraceptive advice. When a medical reason for avoiding pregnancy exists, in the opinion of the committee it is the duty of the attending physician, regardless of his personal beliefs, to inform the patient of her physical condition and the hazard of pregnancy.

Your committee is of the opinion that the medical profession should be familiar with the many problems associated with birth control. Contraceptive practices are only an incident in the broader problem. In view of the fact that many marriages are childless, physicians should inform themselves regarding the entire subject of fertility. It is suggested that more complete education in this particular field be given to medical students. A survey recently published shows that the actual teaching of this subject is ignored in the curriculums of many medical schools.

#### RECOMMENDATIONS

The committee considers that this is necessarily an incomplete report and from its study to date makes the following recommendations:

1. That a committee be appointed to continue a study of Birth Control and to report further to the House of Delegates.
2. Steps should be taken by some responsible group to develop standards for judging contraceptive materials.
3. Your committee desires to record its disapproval of propaganda directed to the public by lay bodies, organized solely for the purpose of disseminating (without consideration or restraint) contraceptive information. Your committee deplores the support of such agencies by members of the medical profession. We feel that an entirely false sense of values with respect to the important function of childbearing and of parenthood has been created by the activities of such organizations.

Respectfully submitted,

CARL HENRY DAVIS, Chairman.  
GEORGE W. KOSMAK.  
JAMES R. BLOSS.  
JOHN ROCK.  
WILLIAM C. WOODWARD.

The interim committee appointed to consider this subject has given much time and labor to its study. Your reference committee thinks that the committee has approached the subject in an absolutely impartial manner and would especially call attention to that part of the report which considers aspects of the question of birth control which are purely medical but are related to the subject matter. The problems of overpopulation in the Western world, eugenic, economic, moral and medical considerations, are thoroughly dealt with.

Your reference committee approves the first and third recommendations of the Committee to Study Contraceptive Practices and Related Problems but does not approve the second. It does not feel that there is yet sufficient knowledge of the subject to go that far and feels that disapproval of certain contraceptive devices would by inference approve others.

Respectfully submitted.

CHARLES E. MONGAN, Chairman  
W. ALBERT COOK.  
FLOYD S. WINSLOW.  
WINGATE M. JOHNSON.  
BRIEN T. KING

On motions of Dr. Mongan, duly seconded and carried, the first two sections of the report were adopted.

Dr. Mongan moved that the report of the Committee to Study Contraceptive Practices and Related Problems be accepted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

On motions of Dr. Mongan, duly seconded and carried, the first and third recommendations contained in the report of the Committee to Study Contraceptive Practices and Related Problems were adopted, while the second recommendation was not approved.

The report of the Reference Committee on Executive Session was adopted as a whole on motion of Dr. Mongan, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Dr. Mongan proposed a vote of thanks to the Committee to Study Contraceptive Practices and Related Problems. This was seconded by Dr. Arthur J. Bedell, New York, and carried.

The House rose from Executive Session, on motion of Dr. W. H. Seemann, Louisiana, seconded by Dr. J. Gurney Taylor, Wisconsin, and carried.

#### Resolutions on Proposed Legislation Dealing with Helium

Dr. Samuel J. Kopetzky, New York, introduced the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, A certain act passed by the House of Representatives and now awaiting action in a Senate committee provides for five million cubic feet of helium to be made available for medical treatment as well as for medical research, and

WHEREAS, The present law provides for medical research only, and

WHEREAS, Helium is of marked therapeutic value in asthma and obstructive lesions in the trachea and larynx, be it

Resolved, By the House of Delegates of the American Medical Association that it approves the allotment of this comparatively small amount of helium at government cost, which would make the therapeutic use of this gas more generally available than it now is, because now it is supplied by one commercial company which controls the private supply, and be it further

Resolved, That we urge the passage of the pending measure before the Senate.

#### Resolutions on Appointment of Committee to Study Problems of Motor Vehicle Accidents

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The street is a battlefield and thousands of our citizens are killed and disabled by reckless incompetent and physically disqualified individuals, and

WHEREAS, The medical profession has stood for centuries past for the safeguarding of life and the prevention of injury, therefore be it

Resolved, That a committee of five be appointed by the President to survey and study the problems of motor vehicle accidents and injuries therefrom, and report to the House of Delegates, and be it

Resolved, That an appropriation sufficient to cover necessary expenses be provided for the study

#### Resolution on Appointment of Committee to Propose Amendment to By-Laws Providing for Fitting Recognition to Fellows Rendering Distinguished Service in Science of Medicine

Dr. H. H. Shoulders, Tennessee, submitted the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, There are a number of Fellows of the American Medical Association who have made noteworthy contributions to the science and art of medicine, and

WHEREAS, There does not exist a provision in the Constitution and By-Laws of this Association whereby fitting recognition of such contributions can be made in an official manner by the American Medical Association, therefore be it

Resolved, By the House of Delegates, that the Speaker be authorized and directed to appoint a committee of five members of the House whose duty it will be to consider this question in association with the Judicial Council, and to propose an amendment to the By-Laws whereby suitable recognition in the form of a medal, testimonial or other recognition may be given to Fellows of the Association who have rendered distinguished service in the science of medicine

#### Resolutions Concerning Graduates of Medical Schools of Foreign Countries

Dr. William R. Molony Sr., California, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, Through the initiation, support and watchfulness of organized medicine, standards of medical education and medical practice have rapidly and continuously advanced, and

WHEREAS, There is a serious danger of this most satisfactory state of progress being undermined, and weakened by the registration to practice of graduates of medical schools of foreign countries, and

WHEREAS, There are at the present time more than 1,500 American students attending medical schools in foreign countries, many of them not having satisfactory credentials for admission to American medical schools, and

WHEREAS, There is in the files of the Council on Medical Education and Hospitals of the American Medical Association, and the Federation of State Medical Boards, evidence that many of the foreign medical schools do not consistently maintain and enforce the same high standards as are maintained in the medical schools of the United States, there fore be it

Resolved, That each applicant for medical license in the United States, in order to adjust this inequality and to show a knowledge of acceptable medical practice, should be required before being admitted to a written examination before a properly constituted examining board to hold a license to practice in the country of his graduation and a certificate that he has completed a year's work as an intern in a hospital approved for internship training or should complete the fourth year in an American Class A medical college, and be it further

Resolved, That the House of Delegates of the American Medical Association approve the foregoing and that a copy be sent to the properly constituted officers of each examining board of the United States and to the Federation of State Medical Boards, with the request that they consider seriously urgent need for the adoption of such rules and/or legislation necessary to put the purposes of these resolutions into effect

#### Resolution Requesting That State Association Be Notified When Hospital is Threatened with Removal from Accredited List

Dr. John W. Ames, Colorado, introduced the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, Protection of the inherent rights of the state medical societies which form the American Medical Association is a primary function of this House of Delegates, and

WHEREAS, Promotion of state medical society activity and respect for state medical society responsibility are established policies of this Association, and

WHEREAS, The officially stated policy and customary procedure of the Council on Medical Education and Hospitals in regard to hospital ranking is a definite negation of these democratic and time honored doctrines, the said Council having ignored the rights of state medical societies and having subsequently denied a respectful petition for correction of such procedure, as will be made clear by detailed documentary evidence accompanying this resolution, and

WHEREAS, As the result of summary and important actions taken by the Council without informing or consulting the interested state medical societies, uncertainty and resentment toward the Council exists in several states, inimical to the general policies of the Association, harmful to the welfare of its members, and deterrent to the ends sought by the Association through the said Council, now therefore be it

Resolved, By the House of Delegates of the American Medical Association that the Council on Medical Education and Hospitals, in all actions



concerning the ranking of a hospital, shall notify the constituted authorities of the interested state medical society and shall allow said society a reasonable opportunity to be heard before the Council makes its decision.

### Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report, which was referred to the Reference Committee on Sections and Section Work:

With regard to the resolutions respecting the use of audiometers, presented by Dr. Burt R. Shurly for the Section on Laryngology, Otology and Rhinology at the 1935 annual session of the Association, the following substitute resolutions are recommended:

WHEREAS, Certain mechanical aids for physical defects are now being sold through the promise of a commission to persons effecting such sales; therefore be it

Resolved, That the practice of offering any commission or bonus to any physician or to any person not an authorized agent is condemned as unfair to the purchaser of mechanical aids, and the acceptance of such commission by a physician violates the Principles of Medical Ethics; and be it further

Resolved, That the fitting of such aids or appliances by laymen without medical supervision constitutes the practice of medicine and should be brought to the attention of the offending manufacturer and of the competent medical licensing authority concerned. Fraudulent, exaggerated or inaccurate claims for such devices may work great hardship on handicapped individuals. Such appliances require investigation by the Council on Physical Therapy of the American Medical Association, or other equally competent authority, and approval by the said Council before publication of any such statements.

### Proposed Amendments to Constitution and By-Laws

Dr. George Edward Follansbee, Chairman, Judicial Council, in accordance with the notification contained in the Supplementary Report of the Judicial Council, presented the following proposed amendment to Article 8, Section 1, of the Constitution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Amend Article 8, Section 1, of the Constitution to read "Members in good standing of the constituent associations who are not now serving and have not served within twelve months sentences for felony are the members of the American Medical Association, subject, however, to the provisions of the By-Laws regarding members."

Dr. Follansbee also presented the following proposed amendments to the By-Laws, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Amend Chapter V, Section 1, fourth sentence, to read "With the approval of the Board of Trustees he is authorized to appoint committees, (a) requested by the Councils, and (b) for emergencies and purposes not otherwise provided for."

Amend Chapter IX, Section 1, the second power invested in the Judicial Council, to read "(2) all controversies arising under this Constitution and By-Laws, and under the Principles of Medical Ethics, to which the American Medical Association is a party."

Add to Chapter IX, Section 1, the paragraph "The Judicial Council shall have authority in its discretion from time to time to request the President to appoint investigating juries to which it may refer complaints or evidence of unethical conduct which in its judgment are of greater than local concern. Such investigating juries, if probable cause for action be shown, shall report with formal charges to the President, who, under Chapter V, Section 1, of the By-Laws, shall appoint a Prosecutor, who, in the name and on behalf of the American Medical Association, shall prosecute the charges against the accused before the Judicial Council. The Council shall have the power to acquit, admonish, suspend or expel the accused."

### Report of Committee on Legislative Activities

Dr. E. H. Cary, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

Your Committee on Legislative Activities begs to report that several meetings have been held by the committee, usually at a time when it was possible to report to the Board of Trustees certain points of interest which the committee members had given prior consideration. The Board of Trustees, after thorough discussion, has accepted these reports. The discussions

and suggestions made by various of the Board members regarding the problems which concerned medical practice everywhere have been exceedingly valuable to your committee.

On this occasion, we beg to present a brief summary of the more important problems which have come within the scope of our activity and with which we dealt according to our best judgment, and we hope, in this connection, that our action will meet your approval.

As time has elapsed, the different members of the committee have been enabled to understand more definitely the wishes of the medical profession and various groups interested in medicine, all of which has broadened the activity of the committee.

Dr. R. L. Sensenich, through the bulletins which he sends regularly to the secretaries and presidents of the state societies, as well as to you gentlemen as members of the House of Delegates of the American Medical Association, has stimulated many suggestions which have been most practical and effective. One suggestion, especially, which would have us encourage a sounder economic philosophy in the secondary schools and colleges, will undoubtedly bear fruit that will be observed in the young aspirants who become medical students. We recognize the limitations of this effort for we are thinking of the young men who are to become doctors, but if we succeed in having young doctors better versed in sound economic and social philosophy, unquestionably the medical graduate will be more apt to appreciate the traditions and opportunities of this noble profession and will make his efforts harmonize with those of his fellow practitioners.

At our meeting with the Board of Trustees in Chicago in February, it was concluded that Dr. William C. Woodward would act in the capacity of adviser to the Committee on Legislative Activities.

In this connection, we would make mention of the contacts and diligent effort on the part of Dr. Woodward and members of our committee to see that Senate Amendment 39 was retained in the War Appropriation Bill, number 1937, H. R. 11035. This amendment has to do with the continuance of medical units in the Reserve Officers' Training Corps. Another matter in which Dr. Woodward and the Chairman of your Legislative Committee have worked in cooperation is the important item of compensation for contract surgeons who served in the Spanish-American War. We have exerted every possible influence, but our personal opinion has been that the fewer requests made in Washington for the benefit of the profession, the stronger our position would be when opposing legislation detrimental to our cause. Further reference will be made to this point later in this report.

We wish to report the activities of another of our members, Dr. F. S. Crockett. Last summer Dr. Crockett, as a member of the American Farm Bureau Federation, had an opportunity to contact the executive secretary of the women's subsidiary organization of this group. On seeking the advice of the Chairman of our committee, Dr. Crockett was asked immediately to go forward with plans for a conference.

Through this contact, Dr. Crockett learned that in this group, as in many others, there was a radical element which oftentimes caused the more conservative members a great deal of embarrassment. The more radical members had passed a resolution endorsing social insurance, which resolution would be referred to the parent organization and would have been adopted by it.

The American Farm Bureau Federation had already had a meeting at which a rousing address was made by the head of a much advertised organization engaged in proposed medical group service. His analysis of the matter as represented was considered tangible evidence of the effectiveness of the insurance plan.

Fortunately, Dr. Crockett was able to cause a change of attitude on the part of executive members of the women's groups. The gratifying result was that, at the instance of these same women, the Farm Bureau adopted a resolution which instructed the president of the organization to appoint a committee to conduct research along the line of what might be done and invited the cooperation of the American Medical Association.

The American Farm Bureau Federation, composed of about three hundred thousand families, is headed by a gentleman who has considerable influence in Washington circles. If the

women's organization had been allowed to drift, the announcement of the president of this federation, with an approximate membership of one million two hundred thousand persons, would in all probability have been "We are in favor of social insurance."

There are two other groups representing an equally large number of people which will be influenced by the decision of the Farm Bureau.

Dr. Crockett, in cooperation with the Committee on Legislative Activities, arranged for a conference with three of the executive members of the Farm Bureau, which was held in Chicago last February.

Our conference disclosed many interesting points: They were not asking for free medical service; they did feel some adjustment should be made in the mileage fee plan; they were deeply interested in securing more adequate medical care for rural communities everywhere. It was agreed that immediate steps should be taken to study a solution for both the important fee problem and the amount of available medical care in the rural sections.

We called the Director of the Bureau of Medical Economics into conference at this time. It was agreed that the Board of Trustees would be asked to authorize Dr. Leland to develop a questionnaire which would be submitted to the Farm Bureau group for approval. It was also understood that this questionnaire would be discussed with the proper individuals in the respective state and county medical societies. We hoped that, through this cooperation on the part of so many forces, valuable information might be obtained on the questions which had been raised at the conference. (A copy of the questionnaire is attached to this report.)

At the time the questionnaire was prepared, a letter was sent to the state secretaries requesting information along the same line. (A copy of the letter is attached to this report.)

A recent letter from the Bureau of Medical Economics informs us that replies to these letters have come in from sixteen states. This does not represent a majority, of course, but the information so far developed indicates that localities lacking medical services are extremely elusive. The secretary of the Michigan State Medical Society sent copies of the questionnaire to secretaries of the county medical societies, and replies from a number of these have come in. It is found that there is almost complete uniformity in the replies. An excerpt from a letter received from the secretary of the Medical Association of the State of Alabama follows:

In reply to your letter of the first instant, I beg to advise that this office has not received from any source complaints of a lack of necessary medical services in the rural areas of Alabama. Of course, there are some locations desirous of having a resident physician but there are not many such and even they are within a reasonable radius of a physician. No plans are in operation or proposed to provide medical services to rural communities.

Also, Georgia reports that a medical economics survey is under way and will be shortly published in their journal. Several state secretaries report that replies have been received from certain localities where it was thought a physician was needed, but investigation has shown that medical services were supplied from nearby places and that it would be impossible for a physician to obtain any reasonable income in such locations.

The data given here are more in the nature of a preliminary report.

The subject of fees based on mileage requires further study. We believe there are inequalities due to conditions involving time and cost of transportation. It is recommended that each state and county society study this problem in its respective area in order that readjustments may be made that will relieve the profession as a whole from the implications of unfair charges in the rural districts.

The latest information that we have from the Associated Women of the American Farm Bureau Federation is that the questionnaire has not developed all the information that they desired. They seem at this time to be more interested in some plan involving the insurance principle. This leaves the matter for further consideration on the part of the committee and we hope that Dr. Crockett, who is on the ground, will be able to bring new information to the women regarding this subject.

We, as a profession deeply interested and responsible for the welfare of these people, must not lose sight of the fact that the main thing is to continue our effort in trying to find the right solution for the social problems which touch the practice of medicine.

Our last report to the Board of Trustees made mention of one or two phases of service relating to the Civilian Conservation Corps. The members of this group, as we understand it, come under the United States Employees' Compensation Act and are permitted to go into any government hospital. It seemed that veterans were objecting to this practice so far as it was related to Veterans' Administration hospitals.

A second complication was the refusal on the part of a number of hospitals to allow full time doctors employed by the government camps to practice in the hospital. In several states it was determined that the Civilian Conservation Corps doctors be licensed in the state and be members of the state medical society. However, in many cases the available physicians were not members of the state society and were not licensed in the states where they were assigned to duty. Our committee decided to take no action, as it is a subject for each state licensing board to determine according to its own legal requirements.

Sickness insurance has been thoroughly discussed. Plans for the distribution of medical care to low income groups are being tried by various county societies. Large industrial interests have approached physicians and county medical societies with plans for the medical care of their employees.

Your Committee on Legislative Activities calls to the attention of the delegates and, through them, to the attention of all constituent associations and component societies, the fact that the attitude and decision of the profession on this question are of utmost importance. It may readily be seen that the profession will lose its continuity of thought and action if its members vary from the principles which have been laid down to guide those active in bringing about contractual relations with any group.

We would now bring you a brief résumé of our recent trip to Washington.

Our visit to the Veterans' Administration disclosed the interesting information that, of the total of 45,673 available beds in veterans' institutions, 2,540 were unoccupied; that there were only 206 service-connected cases awaiting admission. Other details can be had from the committee if desired.

Our committee had received complaints and definite information was requested. We were informed that the regulations as to eligibility of veterans are being strictly respected and that it is believed that the average period of residence in government hospitals will compare favorably with that in civilian hospitals. In some instances the patients have no homes to which they can be discharged, but, on the whole, patients are not retained in hospitals longer than is absolutely necessary. Aside from small additions to existing facilities for neuropsychiatric cases and disabled colored veterans, we were informed there was no reason for additional hospital construction.

Another point of particular interest to us was the statement, made by the medical director of the Veterans' Administration, that every effort was being made to maintain the quality of medical service on a high standard and that an endeavor was being made to stimulate research in the special groups, such as cancer and neuropsychiatry.

The medical associate of the officer of the American Legion in charge of rehabilitation stated that the medical service rendered to the veterans was of high standard and that he had not had any complaint. The officer referred to indicated his interest in the medical service. He expressed the hope that a study may be made with a view to maintaining the medical service at a high standard and to providing the greatest utilization of the material it affords for investigation and research. In this study he stated that it would be desirable to have the advice of members of the medical profession outside of the Veterans' Administration.

He expressed appreciation of the helpful and happy relations existing between the American Medical Association and the American Legion. The committee is confident that the facilities of the American Medical Association will be made available

for the purpose outlined on the invitation of the agencies directing these activities.

We are happy to state that there is nothing unusual occurring in veterans' legislation, despite the innumerable bills introduced into Congress, which would affect veterans' care in some phase.

Information was also developed that the American Legion is not pressing demands for the erection of additional new hospitals.

Being deeply interested in the claims of the contract surgeons of the Spanish-American War, we visited a distinguished gentleman who devotes considerable time and activity to this group of veterans. He stated that it would be impossible at this time to secure such legislation for the principal reason that there are many other groups who rendered service under similar conditions and that legislation to benefit contract surgeons would invite increased pressure from the other groups for comparable benefits. He stated that the amount involved in dollars and cents to care for the contract groups of the Spanish-American War was not large but that there were 170 groups which served similarly in the recent war. It was pointed out that the War and Navy departments had opposed the establishment of the principle involved in extending benefits to civilian employees who served under similar conditions. Two reasons were offered, the first being the difference in rate of pay in favor of those so employed, and the second being that under most conditions the individual was supposed to have had an opportunity to enlist in the regular service and thereby become eligible to service benefits.

However, it was explained that this second point did not apply to medical contract surgeons in the Spanish-American War for the reason that units entering the service were organized under laws of the states from which they came, and in many instances no provision was made for medical officers in time of war in excess of the needs of skeleton peace-time organization. The pension laws provide for female war-time nurses because no provision was made for the enlistment of female nurses in the armed forces of the United States until after the Spanish-American War.

This gentleman was sympathetic toward the need of contract surgeons and stated that he would be glad, at the proper time, to direct his energies and enlist the backing of the organizations in which he is active to secure the enactment of such legislation.

We conferred with several distinguished senators who are in close touch with the Food and Drugs Act. We found why and how it had been amended. It was finally passed in the Senate, with the thought on the part of the senators who had been interested in its welfare that the legislation was good and was necessary and that later the bill might be amended.

Our conference with the chairman of the subcommittee of the House was very interesting. This gentleman and the members of his committee are deeply concerned in writing an effective Food and Drugs Act. We learned from others that the President is very much interested in having an effective bill passed.

The hour spent in the Department of Agriculture with the director of the Food and Drug Administration was very instructive. The chairman of the subcommittee of the House expressed appreciation of the interest and helpfulness of the American Medical Association. We were led to believe that organized medicine could be of tremendous assistance in the enactment of desired legislation.

We are happy to inform you that we contacted the chairman of the important committee which has been given instruction to consider the possible reorganization and coordination of the executive agencies of the government in the interests of efficiency and economy. The attitude of your committee was of proffered assistance or advice in the event that the proposed changes would in any way reflect on or involve medical service. We were advised that the committee had only begun its studies and was at this time considering only economic problems, and that it would probably be next October or November before anything relating to medicine would be discussed.

We learned that the chairman realizes the tremendous cost of sickness insurance and is vitally interested in the matter of efficiency and economy for the government. May we interpolate that, under such circumstances, sickness insurance would certainly not fit into the plans of the committee?

Our visit to the narcotics division disclosed some appalling evidence which substantiated the information that licensing boards permit 80 per cent of the physicians convicted of the illegal use of narcotics to continue in practice. We saw evidence that in one instance a physician purchased 65,000 half grain morphine tablets in six months. His license was not revoked although the facts were presented in court. In many cases it is difficult to obtain acceptable proof of administration of narcotics, but it would seem that known facts of this nature would be sufficient to bring about a revocation of license. Apparently the narcotic division is trying to cooperate with the state authorities. We were informed that the federal department does not take the initiative in regard to such violations or in enforcing them unless there is abundant evidence that an individual is an intentional trafficker in narcotics or is knowingly engaged in illegal use of drugs.

We had a pleasant contact with medical associates in the Children's Bureau of the United States Department of Labor. These gentlemen were in charge of the Maternal and Child Health Service and the Services for Crippled Children. We had the pleasure of discussing the manner in which these activities should be organized in the different states. Because state programs are acceptable to the Bureau after certain basic requirements have been met, there is, accordingly, considerable variance in the manner in which the work is directed. In fully half the states, the direction of the work rests with the state department of public health; in others, the departments of public health have held to the formula that public health service should in no way enter into the treatment of the individual. Here, departments of public welfare or other agencies have been set up for the administration of this activity.

The gentlemen with whom we talked are physicians of years of experience in private practice and gave evidence of a sympathetic point of view in considering the medical profession in the administration of this activity. They pointed out that the wording of the Social Security Act and the instruction of their superiors is to the effect that the medical profession shall under all circumstances be consulted, their wishes respected and their cooperation sought.

It was made clear, however, that if the medical society of the state shows no interest or is unable to secure satisfactory state organization for the administration of the act, the Bureau representatives in Washington are unable to particularize sufficiently to solve medical problems which obviously must be handled locally.

These questions deserve our most careful consideration. We must cooperate to develop plans which will preserve all the rights of the private practice of medicine. The officials in charge of this work at present are in sympathy with our ideals. The wrong plan, however, based on a few unsound principles, could easily prove to be the opening wedge for further inroads on the private practice of medicine which would be difficult to stop.

The medical men in this department are anxiously seeking the guidance of members of the medical profession. The leaders of medicine should be intimately associated with health authorities so that no plan, obnoxious or unworkable, will be devised to distribute these governmental benefits throughout the various states.

Your committee renewed its friendly contact with the American Federation of Labor. This organization is not in favor of sickness insurance. In fact, it can be said that Labor can be placed on record as being opposed to "company doctors," "contract doctors" and "political doctors"; that it wishes only employment under conditions compatible with health and reasonable living standards, and that it will care for its own medical problem.

The Chairman of your committee had the pleasure of an interesting visit with the new head of the United States Public Health Service. This gentleman points to his record as a public servant in New York as indicative of his attitude toward the private practice of medicine.

He spoke of the tremendous responsibility involved in expending the huge sum of money which has been placed in his hands. He requested the cooperation of the medical profession and is apparently deeply interested that whatever activity may come about from the expenditure of this money will meet the approval of the leaders and members of the state medical societies.

Your Chairman became convinced that this gentleman is interested in the present activities of the Public Health Service.

If these activities are broadened, the profession will have ample time for discussion.

The information was developed that statistics now being gathered on health conditions throughout the United States would be distributed and that members of the medical profession and others interested would be asked to make a preliminary study for the purpose of evaluating the matter before it is finally published.

Respectfully submitted

E. H. CARY, Chairman.  
F. S. CROCKETT.  
R. L. SENSENICH.  
C. B. WRIGHT.  
J. H. J. UPHAM.

#### QUESTIONNAIRE ON RURAL MEDICAL CARE, FARM BUREAU INVESTIGATION

1. Population of each locality or district.
2. What proportion of the farm population in each locality or district is composed of  
Farm owners                      % Tenants                      %
3. Occupational pursuits in each locality or district  
(Underline the pursuit which predominates, check other pursuits which exist)
  1. Agriculture.
  2. Mining
  3. Dairying and dairy products.
  4. Truck gardening and canning
  5. Lumbering.
  6. Stock raising (grazing)
  7. Fishing industries.
4. Is the population of such localities able to support necessary medical facilities by any system, or will it be necessary to include the possibility of state or federal assistance to maintain such facilities?
5. Give distances to nearest surrounding towns or cities
6. To what extent have conditions been changed in recent times by automobiles and good roads which attract medical patronage to more distant centers?
7. What organizations, existing in such localities, is it proposed to use for purposes of investigation, or as a nucleus for the financial organization of medical care?
8. How numerous are the instances of inability to secure needed medical care in specified localities? Give list of places
9. Have these localities had practitioners of medicine within the past ten years that have not been able to make a living?
10. What sort of medical facilities appear to be needed—hospitals, physicians or others?

#### LETTER FROM DR. LELAND'S OFFICE

To State Secretary

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Dear.....

The Bureau of Medical Economics has received many requests for information concerning rural medical service and plans for its reorganization. In order that the Bureau may answer these requests intelligently, it is necessary to ask the help of the secretaries of state medical societies in procuring accurate and detailed information on this subject.

We shall greatly appreciate your help in locating any facts in regard to rural medical service in your state. Have you received, from any source, complaints of a lack of necessary medical services, and if so, in what counties? Do you know of any plans in operation or proposed to provide medical services to rural communities, such as subsidies to physicians by local governments or organizations, cooperative hospital or medical service associations or any similar plans to provide medical care for the rural areas?

We shall also be glad to be informed of any investigations of rural medical service made by any person or organization in your state, and especially if the state medical society has made or is contemplating any such study. If you will assist us in collecting information on this subject we shall be glad to reciprocate by placing at your disposal any facts gained from the general study.

Sincerely yours,

BUREAU OF MEDICAL ECONOMICS

#### Address of Mr. Will Shafroth

The Speaker introduced Mr. Will Shafroth of the American Bar Association, who addressed the House as follows

*Mr. Chairman, Members of the House of Delegates:*

I am very pleased and proud to bring you the greetings of the American Bar Association. I am also glad to have an opportunity personally to thank you for the courtesy you

extended me in permitting me to be present at your sessions this afternoon. I want to say that I have been very much impressed with this deliberative body from the time that it was convened yesterday morning at ten o'clock and thirty seconds until the present moment. I feel that a representative parliament of the medical profession is one of the reasons for the greatness of your national association, and I know you will be interested to know that at the meeting of our association in Boston this summer a provision will be introduced for the amendment of our constitution to create a house of delegates of the legal profession.

We really have a great number of problems in common, and as I sat here I was very interested to hear talk of the integration of the medical profession. We now have seventeen states where they have an integrated bar. I was interested to hear talk of the closer investigation of the character of medical students—a thing that we are trying to do as to students who are seeking admission to the bar. You had a resolution as to medical lists; we have a great problem as to commercial law lists. Those problems are all interrelated, and I hope that as time goes on we will have a continuously closer association with you.

I want to thank you very much for this opportunity and it is a great pleasure to be here.

#### Membership in County and State Associations for Members of Staffs of Hospitals

Dr. G. Henry Mundt, Illinois, asked that Dr. W. D. Cutter, Secretary of the Council on Medical Education and Hospitals, be requested to address the House of Delegates with respect to the progress made in carrying out the provisions of a resolution adopted at the Cleveland session, which declared that members of approved hospital staffs should be members of component county and constituent state associations.

Dr. Cutter addressed the House, declaring that progress had been made in carrying out the purposes expressed in the resolution and explaining the difficulties that had been encountered. He expressed the opinion that it would require a considerable time to accomplish the desired ends but stated that the Council was in sympathy with the purposes of the resolution and would continue its efforts to secure the accomplishment of those purposes.

#### Executive Session

The House went into executive session to hear a supplementary report of the Reference Committee on Executive Session.

#### Supplementary Report of Reference Committee on Executive Session

Dr. C. E. Morgan, Chairman, presented the following report:

Your reference committee finds that the failure of state licensing boards to take disciplinary action against physicians reported to them by the United States Commissioner of Narcotics as having violated federal narcotic laws or as being narcotic addicts has on two occasions led to threats of federal legislation that would in some or in all cases make the right of every physician to use narcotic drugs professionally contingent on permits issued by some federal officer duly authorized for that purpose.

In the opinion of your committee the matter of licensing physicians should be kept strictly within the jurisdiction of the several states. Your committee recommends, therefore, that the several constituent associations take up with the medical licensing boards of their respective states the matter of disciplinary action in cases such as those described, with a view to the adoption of such action in appropriate cases, and that the constituent associations seek such further legislation, if any, as may be necessary to permit the accomplishment of that end.

Respectfully submitted.

CHARLES E. MORGAN, Chairman.  
FLOYD S. WINSLOW.

WINGATE M. JOHNSON.  
W. ALBERT COOK.  
BRIEN T. KING.

On motion of Dr. Morgan, seconded by Dr. J. Gurney Taylor, Wisconsin, and carried after discussion during which it was suggested that the matter be taken up at the Annual Conference of

Secretaries of Constituent State Medical Associations in November, the report was adopted.

The House rose from executive session on motion of Dr. J. Gurney Taylor, Wisconsin, seconded by Dr. John Z. Brown Sr., Utah, and carried.

#### Address of Dr. Leon Asher

The Speaker presented Dr. Leon Asher, Bern, Switzerland, who addressed the House as follows:

*Mr. Chairman, Gentlemen, Colleagues:*

I would like to say, and I hope you will accept it: It is a very great honor for me to be amidst you. By American hospitality I am visiting very many universities, but I have also opportunities of seeing the medical profession in its activities and its societies, and allow me to say that it is really startling for a European visitor to see the high way in which you are, in the first place, acting in your profession and, in the second place (and that is of course of interest to university men), the high way in which you are handling medical education. We all know in Europe that the American universities, especially the American medical schools—I am now speaking of them—are on a very high plane, and as far as I am aware that is principally due to the great help which the American Medical Association renders the universities and is due to you gentlemen that the American medical schools have reached the high position they have. That is due to the fact that the medical profession sees that all members have a high standard in science and in medical knowledge, and the few moments that I have now been with you show me what high standards you also have as to medical ethics. Medical ethics is just as important for the profession as medical knowledge, and I congratulate the American Medical Association and the leaders who are sitting here on their very high achievements. I ought not to express the wish that your achievements will be still higher because I don't know how you are able to surpass yourselves.

#### Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report, which was adopted on motion, duly seconded and carried:

Complying with the instructions of the delegates, the Judicial Council reports the following procedure for the installation in absentia of the President-Elect, Dr. J. Tate Mason. The Council recommends that President McLester shall formally and officially declare President-Elect J. Tate Mason duly installed in absentia as President, and designates as a committee representing this House of Delegates to convey to President-Elect Mason and the members of his family at this time the action so taken: Drs. Brien T. King, Delegate from Washington, John H. Fitzgibbon, Delegate from Oregon, John H. O'Shea, member of the Judicial Council, and Ralph A. Fenton, member of the Board of Trustees.

The Council also recommends that this action be entered on the minutes of the Association and that an appropriately embossed copy of that portion of the minutes of the Opening General Meeting of the 1936 Session of the American Medical Association covering the induction into office of the officers of the Association be sent to him through an appropriate person.

#### Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Frederic E. Sondern, New York, completed the report of the Reference Committee, a portion of which was presented by him at the Tuesday morning session. The report in its entirety follows:

#### REPORT OF BOARD OF TRUSTEES

Your committee can see in the increased length of this report, some ninety-four pages of the Handbook, an added third of material over a year ago, not only the mounting task of your executive body but also its increasing responsibility. The increase in the number of employees from 518 at the end of 1934 to over 550 at the present time is additional evidence of this increasing activity. Few boards conducting activities as great are asked to exercise control in such varied fields, even if advised by experts. The increasing success in every one of

their endeavors proves their competence. While your committee can propose no reward for this increasingly arduous service, we can at least impress on the members of this House the debt we owe these men and the respect which should be theirs for their opinions, on account of their proved efficiency.

*The Journal.*—The fact that the paid circulation of THE JOURNAL for 1935 was larger by 4,344 subscriptions than in the preceding year is evidence of its increasing usefulness and popularity, a direct tribute to its editor, whose other editorial and literary activities very evidently do not detract from this his chief purpose. As the result of his ability and constant high standard, it is without question the most informative and leading publication of its kind in any language.

*Special Journals.*—It is recognized that these journals are equal to the very best published anywhere, and that they render undoubted educational service. While a gain in circulation was achieved, the cost of production over the money return is considerable. Attention should be given to the concern of the Board in the matter of commercially published periodicals in special fields which become the official organs of special societies with compulsory subscriptions. Loyalty to the Association and its interests should prompt the members of such societies to arrange for services in the publications of the Association, a matter which could doubtless be made to serve the best interests of both the society concerned and the Association. Greater publicity concerning the special journals might increase their circulation.

*Hygeia.*—The report indicates that this magazine is serving well the purpose for which it was established. The information that 3,000 subscriptions arranged by the Army Medical Department for the CCC have been promised is noteworthy. While the cost of production was considerably greater than income, it would seem to your committee a legitimate expense in view of what the publication achieves. Its utility for placing before the public the disadvantages of socialized medicine when it may become necessary to mold opinion in this regard would be an additional reason for its being.

It is quite possible for one to query the need of expenditure over income in the matter of Association publications generally and library activities. It must be remembered that academies of medicine and similar organizations throughout the country are judged in effectiveness by their publications and library facilities. The American Medical Association has reached its enviable standard of excellence and position in the interest of scientific medicine, which is recognized the world over, not by its annual meetings, worthy as they are, but by its continually increasing publications in practically every field to enhance medical knowledge, to inform the profession far and wide and to protect the public. All this work has been kept on the highest plane by the careful scrutiny of all material, meticulous supervision and faultless production. Your Editor, Dr. Morris Fishbein, has for years made this his life's work, and the undoubted success attained has in large measure been due to unusual vigilance and ability, for which he richly deserves commendation. All this costs money, lots of money; but, guarded by the Board of Trustees, to what better use in the interest of the public and the profession can money be spent?

*Quarterly Cumulative Index Medicus.*—The report of your Board that this publication is recognized the world over as the most significant publication in its field is generally acknowledged. The statement that its importance increases as other indexes, such as the *Index Catalogue of the Surgeon General's Office*, has become less available, makes the need for it imperative. Its cost in excess of income of \$44,439.84 prompts the suggestion by your committee that efforts could be made to secure a grant from the Carnegie Foundation or similar body in the support of this essential aid in bibliography.

*Building and Equipment.*—Your committee notes with interest and approval the economy and increased efficiency to be obtained as the result of the alterations, improvements and replacements about to be completed.

*Council on Pharmacy and Chemistry.*—It is again apparent how huge the task is which confronts the members of this council, and it is for this reason that the resignation of such busy men as Drs. Bayne-Jones, Blackfan and Du Bois became necessary. There is every evidence of the continued efficiency

of the service, of the greater use of the conclusions by the profession, and of the greater respect of manufacturers, which results in their striving for improved scientific standing. The adoption of a reorganization plan by the Council on Pharmacy and Chemistry in cooperation with the Council on Physical Therapy and the Committee on Foods for a federation of the administrative work of these three groups, and a correlation of overlapping problems, will probably save much time and effort to their mutual advantage.

*Council on Physical Therapy.*—The work accomplished by this council is again an evidence of the sacrifice of time by busy men in the interest of the public and the profession. It is characterized by educational activities in the preparation of articles and a handbook, cooperation with other organizations, arranging curriculums, establishing a registry for qualified technicians, and providing speakers to stress the use of simple physical therapy rather than expensive apparatus, and by investigation and standardization of apparatus and similar activities. Research grants were also awarded. The reorganization previously mentioned will also conserve time and energy in the way described.

*Bureau of Legal Medicine and Legislation.*—This report has been referred to the Reference Committee on Legislation and Public Relations.

*Bureau of Medical Economics.*—This report has likewise been referred to the Reference Committee on Legislation and Public Relations.

*Bureau of Health and Public Instruction.*—It is evident from the report that the expansion in the scope of the work including increased correspondence and activity in the field required the appointment of an assistant director versed in public health education. It has been apparent for some time to those of us interested in radio broadcasting as a method of public health instruction that the ordinary radio talks by representative members of the profession no longer command the interest of the public, which has been increasingly sophisticated by the more attractive presentation of radio broadcasting generally. For this reason your committee commends the effort of this bureau in the substitution of radio dramatizations in the interest of public health, and the success attained. While the major companies in the broadcasting field have as the result of the endeavors of the Bureau improved their rules in the interest of approved public health communications, smaller local stations, existing in large numbers, still sell time to unprincipled speakers on medical topics. While the appeals to the Federal Communications Commission in charge of broadcasting have not eliminated this evil, continued efforts are advised. The more practical supervision of such publicity, also of the press and cinema by organized medicine, where it exists, is most desirable, but unfortunately it does not include the worst offenders, who are not members and consequently not subject to such restrictions.

*Bureau of Investigation.*—Your committee desires to record its appreciation of the services of Dr. Arthur J. Cramp for thirty years, especially as the efficiency of the Bureau became outstanding under his direction. It is a satisfaction to know of its continued able management.

*Bureau of Exhibits.*—The continually increasing effectiveness of the Bureau is another cardinal activity of the Association in furthering scientific medicine. The exhibits at the annual meeting are noteworthy indeed, their educational value is unusual, and they are the envy of and the pattern for similar efforts anywhere.

*Committee on Foods.*—The report of the Committee indicates plainly the stress of work under which it has labored, which in fact necessitated that for a period submission must be restricted. As stated, "it has become more and more evident that the facilities of the office would not permit the amount of policing over advertising of accepted products that such material seems to demand. That claims opposed to the principles of the American Medical Association are promulgated from time to time is only too evident."

Your committee is quite in sympathy with the difficulties encountered and would suggest the indulgence of the membership to allow the Committee on Foods, a relatively new undertaking, to get into the usual completely efficient stride of American Medical Association endeavors.

*Requests for a Special Session of the House of Delegates, Resolution Concerning the Establishment of a National Department of Health, and Resolution Pertaining to Scarlet Fever Patent.*—Your committee supports the conclusions reached by the Board of Trustees in these matters.

*Instruction in Medical Schools Regarding Organized Medicine.*—Your committee endorses the request of the Board of Trustees in presenting the following resolutions for your consideration:

WHEREAS, It has been noted with disappointment that some of the graduates of medical schools and colleges in recent years apparently are unfamiliar with the objectives and activities of organized medicine and lack a clear understanding of the benefits to be derived through membership in local, state and national medical societies; be it

Resolved, By the House of Delegates of the Ohio State Medical Association, Oct. 2-4, 1935, that the administrative officials of all accredited American medical colleges be respectfully requested to provide instruction for senior students on the activities, services and benefits of organized medicine; be it further

Resolved, That a copy of this resolution be transmitted to the dean of each of the accredited medical colleges of America, the Council on Medical Education and Hospitals and the Board of Trustees of the American Medical Association, and the secretary of each constituent state medical society.

*Resolution Pertaining to Pure Food Bill and to Advertising.*—In the language of the Board of Trustees, "Councils, bureaus and departments of the Association have given the utmost possible cooperation to the Food and Drug Administration of the Department of Agriculture and to other governmental agencies concerned with the administration of federal statutes."

It is the opinion of your committee that the Board has given unusually careful attention to the matter concerned and justifies its conclusions which your committee desires to endorse. Relative to the other matters concerning the Pure Food Law, the use of labels or approval of the Committee on Foods, and the acceptance of certain advertising matter by the Association, which have been the subject of correspondence and certain controversy between representatives of the Medical Society of New Jersey and the Board of Trustees, your committee has carefully noted all the material submitted and also obtained additional details from the secretary of the Council on Pharmacy and Chemistry, and from the representatives of the Medical Society of New Jersey.

It is the opinion of your committee that the representations of the Medical Society of New Jersey were made in good faith and only in the interest of the best traditions of the Association. It is likewise the opinion of your committee that the Board of Trustees and the various councils concerned have given meticulous attention to these matters, and that their conclusions are the result of careful, efficient thought, with which your committee is in complete accord.

*Committee on Therapeutic Research and Committee on Scientific Research.*—Your committee is in complete agreement with the numerous grants in support of individual research made by these committees. We view with individual pleasure the support of the man properly qualified to envision an ideal. After all, it has been individual initiative, keen individual competition and the idealistic strife for achievement which is behind not only the success but also the glory of our country. Steam, electricity, telegraph, radio and every modern advance is the result of individual and not collective effort. In these days, when we are threatened with subsidy, to collectivism and bureaucracy, let us continue to emulate the principle of the American pioneer, glad to stand on the basis of his individual effort or to starve on his individual failure.

The ultimate success of our state will not be based on our suckling on her bosom but on the rugged individualism of each stalwart, willing to work such hours needed to accomplish his task with honesty and the fear of God as his maxim.

*Treasurer's Report and Auditor's Report.*—Your committee views with pleasure the figures submitted. The budget is balanced and the reserve in such form as to create the envy of less fortunate and less well managed groups.

*Invitation to the Association to Meet with the Canadian Medical Association in 1939.*—The wisdom of the decision of the Board that it does not seem expedient to have a joint meeting in the near future is quite apparent to your committee, although with regret. In these days of stress and strife between



nations, when closer association of the English speaking peoples is a comfortable thought, to those of us who believe in this harmony, it is suggested that the Association should stimulate its members to visit the annual meeting of the Canadian Medical Association, just as we may hope to have the Canadian Medical Association stimulate the visit of their members to our annual meeting.

#### REPORT OF THE SECRETARY

Your committee cannot pass to this report without contemplation for a moment of the individual. Olin West—who hears or thinks of this name without a feeling of well being?—that genial gentleman, courteous, explicit, kindly and truthful, with but one thought, the interest of our Association. You may mark his grave with a monument, you may decorate his shirt front with a medal. We don't know—but we do know that any commendation that can be put into words, of which we are scarcely capable, this House would rise in acclaim. As a token of our respect and regard, we ask that you do so now!

The Secretary reports with pride a membership of 2,000 in excess of ever before. A Fellowship of over 63,000. He commends the Annual Conference of Secretaries, and the field work of the Association, to which your committee begs to attract your attention.

His comment relative to greater care in the selection and admission of members deserves your attention.

The set of resolutions in his report for your attention has been otherwise introduced. His suggestions relative to membership jurisdiction deserves the earnest consideration of the component state societies and has the endorsement of your committee.

On motions of Dr. Sondern, duly seconded and carried, the report of the reference committee was adopted section by section and as a whole.

#### Report of Reference Committee on Sections and Section Work

Dr. Arthur J. Bedell, Chairman, presented the following supplementary report, which was adopted on motion of Dr. Bedell, seconded by Dr. John Z. Brown Sr., Utah, and carried.

Your committee had before it for consideration a substitute resolution offered by the Judicial Council, covering the original resolution presented by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology.

Your committee recommends the adoption of this substitute resolution.

Respectfully submitted. ARTHUR J. BEDELL, Chairman.  
C. L. CUMMER.  
C. W. ROBERTS.

The House recessed at 5 p. m., to meet at 1 p. m., Thursday, May 14.

### Third Meeting—Thursday Afternoon, May 14

The House of Delegates was called to order at 1:10 p. m. by the Speaker, Dr. N. B. Van Etten.

#### Report of Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that Drs. Grant C. Madill and Thomas P. Farmer, regularly elected delegates from New York, were unable to be present; that their regularly elected alternates were not in attendance, and that the president and the executive committee of the council of the Medical Society of the State of New York certified Dr. Newton T. Saxl and Dr. Edwin G. Ramsdell and desired to have them seated. Dr. Brook moved that Drs. Saxl and Ramsdell be seated. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Dr. Brook reported further that there was a total registration of 168 delegates.

#### Roll Call

Dr. Olin West, Secretary, called the roll and announced that more than a quorum of the House had responded.

#### Presentation of Minutes

It was moved by Dr. J. D. Brook, Michigan, seconded and carried, that the minutes be read by title.

Dr. Olin West, Secretary, presented the minutes of the meetings of the House held on Tuesday morning and afternoon,

May 12, and on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. Harold T. Low, Colorado, and carried, the minutes were adopted.

The matter was reconsidered on motion of Dr. L. J. Hirschman, Michigan, seconded and carried.

Dr. Hirschman then moved that the Secretary delete from the minutes of Tuesday, May 12, all debate regarding the installation of the President-Elect. The motion was seconded by Dr. Harold T. Low, Colorado, and carried, after amended to read that when so deleted the minutes be adopted.

#### Report of Board of Trustees

Dr. Rock Sleyster, Chairman, reported that the Committee to Study Contraceptive Practices and Related Problems had been continued and that the Board understood that Dr. Carl H. Davis had consented to serve on it.

#### Report of Reference Committee on Legislation and Public Relations

Dr. R. L. Sensenich, Chairman, presented the following report:

#### REPORT OF COMMITTEE ON LEGISLATIVE ACTIVITIES

The report of the Committee on Legislative Activities was referred to this committee. The report of this committee covering the activities of the past year is obviously too lengthy to be reread at this time. Your committee commends the Committee on Legislative Activities for its continued efforts throughout a very comprehensive field during the past year. There are some points in the report which your reference committee believes may properly be developed to a somewhat broader view and should especially be emphasized.

The report of the Committee on Legislative Activities in referring to the adequacy of medical service rendered in rural communities and charges for such services on a mileage fee basis states as follows: "The subject of fees based on mileage requires further study. We believe there are inequalities due to conditions involving time and cost of transportation. It is recommended that each state and county society study this problem in its respective area in order that readjustments may be made that will relieve the profession as a whole from the implications of unfair charges in the rural districts." Your committee recommends that the Bureau of Medical Economics of the American Medical Association be requested to prepare a brief statement based on the information obtained from the survey and studies now being conducted, this information to be forwarded to the secretaries of the constituent associations in such form that it may be printed in state journals, or that if desired a sufficient number of copies be supplied so that they may be distributed to the component county societies.

The following statement from the report of the Committee on Legislative Activities, your committee deems worthy of further consideration:

"Sickness insurance has been thoroughly discussed. Plans for the distribution of medical care to low income groups are being tried by various county societies. Large industrial interests have approached physicians and county medical societies with plans for the medical care of their employees.

"Your Committee on Legislative Activities calls to the attention of the delegates, and through them to the attention of all constituent associations and component societies, the fact that the attitude and decision of the profession on this question are of utmost importance. It may readily be seen that the profession will lose its continuity of thought and action if its members vary from the principles which have been laid down to guide those active in bringing about contractual relations with any group."

Your reference committee points to the fact that, in contracts between physicians or organized medical groups and employers or groups of employees, the qualification of those eligible for medical service under the contract is based on the source of their employment rather than the amount of their incomes. In this respect such contracts must not be confused with the various experimental plans for the relief of low-income groups, which have been defined and within certain limits approved for the purpose of study. Financial concession to members of certain groups, solely because they are employed by the same

employer, regardless of whether the service is to be paid for by the employer or the employee, establishes a pattern for which there is not the same justification as that in which eligibility rests on an income basis. The consideration of such contracts is not an emergency matter.

Prudence suggests the avoidance of possible bad effects rather than dependence on judicial appeal after unwise action has been taken.

Your reference committee therefore recommends that before any such contracts are entered into they should be submitted to the state medical association having jurisdiction, for approval or disapproval. The reasons on which is based the request for approval in establishing such a contract should be stated. Evidence should also be presented that the provisions of the contract would not operate in violation of restrictions on such practice as has been defined by the Judicial Council and action of the House of Delegates.

Information concerning the acts and policies of local units of organized medicine travels rapidly and the enthusiasm of the moment frequently encourages similar action in other units before sufficient time for dependable trial has elapsed. Mutual interests and objectives which underlie the relations existing between the constituent associations should impose the obligation that, before approval is given to a program which must obviously reflect on the interests of other states, the state considering such approval should transmit the information on which it is basing its judgment to the other constituent state associations and to the American Medical Association.

The following refers to the administration of the Social Security Act in the respective states: "If the medical society of the state shows no interest, or is unable to secure satisfactory state organization for the administration of the act, the Bureau representatives in Washington are unable to particularize sufficiently to solve medical problems which obviously must be handled locally. These questions deserve our most careful consideration. We must cooperate to develop plans which will preserve all the rights of the private practice of medicine."

Your reference committee wishes to emphasize the importance of this matter and to point out that the component county medical societies must be equally informed and active, as is the organization of the constituent state associations, for it is the members of the county society who will be concerned at the ultimate point of contact between the administration of the Social Security Act and the public, and it is here that the weaknesses and abuses will be first evident.

Delegates and secretaries of state societies should take the message from this meeting to their component societies. Something might also be gained by discussion of the operation under the various types of administration of this act before the Conference of State Secretaries in Chicago.

#### RESOLUTION ON APPOINTMENT OF COMMITTEE TO STUDY PROBLEMS OF MOTOR VEHICLE ACCIDENTS

Your reference committee gave consideration to the resolution which provides for the appointment of a committee of five to be appointed by the President to survey and study the problems of motor vehicle accidents and injuries therefrom. The resolution also directed the appropriation of sufficient amount to cover the necessary expenses. The House of Delegates has taken action with reference to the physical fitness of automobile drivers. Your committee is also of the impression that much of the information desired may be obtained from studies made by other bodies, and that information would be available to the American Medical Association. As the resolution directs the appropriation of money to finance the proposed study, it passes from the jurisdiction of the House of Delegates to the Board of Trustees. Your committee, therefore, recommends that the resolution be referred to the Board of Trustees for such action as it may deem wise.

#### CONSIDERATION OF SENATE BILL 4516

Your committee had before it Senate Bill 4516, introduced into the Seventy-Fourth Congress by Mr. Robinson, to provide subsidies for the erection and operation of tuberculosis hospitals. After a hearing of interested parties by the committee, Dr. Horace Reed, Oklahoma, who had presented the bill to

the House, requested permission to withdraw it, and your reference committee recommends that such permission be given, without action by the reference committee.

Respectfully submitted.

A. C. MORGAN.

C. J. WHALEN.

R. L. SENSENICH, Chairman.

J. H. IRWIN.

E. N. ROBERTS.

The report of the reference committee was adopted section by section and as a whole, on motions of Dr. Sensenich, duly seconded and carried.

#### Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

##### RESOLUTIONS ON CONTROL OF OCCUPATIONAL DISEASES

After careful consideration, the committee is of the opinion that while the resolution, as introduced by Dr. A. R. McComas, Missouri, was of value, the meaning might be clarified and the purpose better served if it were presented in a different form. After conference and agreement, therefore, with the sponsors of the resolution, the committee desires to present the following substitute resolutions and to recommend their adoption:

WHEREAS, In recent years there has developed an increase in recognition of the seriousness of diseases arising from conditions to which workers are exposed from certain occupations; and

WHEREAS, The diagnosis of such diseases is possible only by physicians, and the correction of such conditions as would tend to eliminate the hazards can best be carried out under the guidance and administration of physicians, particularly physicians trained and experienced in industrial hygiene or public health; therefore be it

Resolved, That it be deemed essential that any active efforts by governmental agencies to study and to take measures tending to eliminate occupational diseases should be carried out under the supervision of the city, state or federal departments of health in this country and that this Association do all within its power to assist in this endeavor; and be it further

Resolved, That the Board of Trustees of this Association continue and enlarge its study of industrial hygiene, occupational diseases, and particularly silicosis, to the end that uniform legislation be put into effect in all the states to control these conditions.

#### COOPERATION WITH UNITED STATES CONSTITUTION SESQUICENTENNIAL COMMISSION

The Reference Committee on Hygiene and Public Health has given careful consideration to the program of observance of the one hundred and fiftieth anniversary celebration of the formation of the constitution of the United States and recommends that the House of Delegates give its endorsement and moral support to the purposes served by the United States Constitution Sesquicentennial Commission established by the Congress of the United States.

#### RESOLUTIONS ON PROPOSED LEGISLATION DEALING WITH HELIUM

According to the sources of information available to the committee at the present time, the passage of the proposed legislation is desirable from the medical standpoint. The committee therefore recommends the adoption of these resolutions.

Respectfully submitted.

WARREN F. DRAPER, Chairman.

J. NEWTON HUNSBERGER. HENRY C. MACATEE.

FELIX J. UNDERWOOD. GUY W. WELLS.

On motions of Dr. Draper, duly seconded and carried, the report of the reference committee was adopted section by section and as a whole.

#### Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. John W. Ames, Chairman, presented the following report:

##### PROPOSED AMENDMENT TO BY-LAWS, CHAPTER V, SECTION 1, AND CHAPTER IX, SECTION 1

Your committee approves the following amendments:

Amend Chapter V, Section 1, fourth sentence, to read "With the approval of the Board of Trustees he is authorized to appoint committees, (a) requested by the Councils and (b) for emergencies not otherwise provided for."

Amend Chapter IX, Section 1, second power invested in the Judicial Council, to read "(2) all controversies arising under this Constitution and By-Laws and under the Principles of Medical Ethics to which the American Medical Association is a party."

The first paragraph of Section 1, Chapter IX, will then read: THE JUDICIAL COUNCIL.—The judicial power of the Association shall be vested in the Judicial Council, whose decision shall be final. This power shall extend to and include (1) all questions involving Fellowship in the Scientific Assembly or the obligations, rights and privileges of Fellowship; (2) all controversies arising under this Constitution and By-Laws and under the Principles of Medical Ethics to which the American Medical Association is a party; and (3) controversies (a) between two or more recognized constituent associations, (b) between a constituent association and a component society or societies of another constituent association or associations or a member or members of another constituent association or other constituent associations, and (c) between members of different constituent associations. In all these cases the Judicial Council shall have original jurisdiction.

Add the following paragraph to Chapter IX, Section 1: "The Judicial Council shall have authority in its discretion from time to time to request the President to appoint investigating juries to which it may refer complaints or evidence of unethical conduct which in its judgment are of greater than local concern. Such investigating juries, if probable cause for action be shown, shall report with formal charges to the President who, under Chapter V, Section 1, of the By-Laws, shall appoint a Prosecutor who, in the name and on the behalf of the American Medical Association, shall prosecute the charges against the accused before the Judicial Council. The Council shall have the power to acquit, admonish, suspend or expel the accused."

#### PROPOSED AMENDMENT TO BY-LAWS, CHAPTER XI, SECTION 1

An amendment to Article 8, Section 1, of the Constitution was presented to your committee. After careful consideration and in conference with the Judicial Council it was deemed advisable to incorporate the amendment in the By-Laws, Chapter XI, Section 1. As this amendment originated with the Judicial Council, your committee feels that this change will be entirely satisfactory to the House. Your committee therefore suggests the following amendment to Chapter XI, Section 1, first sentence: "Membership in this Association shall continue only so long as the individual is a member of a component society of the constituent association through which he holds membership and who is not now serving, or within twelve months has not served, a sentence for felony."

#### RESOLUTION PROVIDING FOR FITTING RECOGNITION TO FELLOWS RENDERING DISTINGUISHED SERVICE IN SCIENCE OF MEDICINE

Your committee recommends the approval of the resolution, and the recommendations continued therein, on the appointment of a Committee to Propose an Amendment to the By-Laws Providing for Fitting Recognition to Fellows Rendering Distinguished Service in Science of Medicine, which was presented by Dr. H. H. Shoulders, Tennessee.

#### PROPOSED AMENDMENT TO BY-LAWS, CHAPTER XIV, SECTION 13

Your committee considered the following portion of the report of the Reference Committee on Sections and Section Work, which had been referred to it:

"In closing this report, your committee, prompted by a desire to make possible a contribution to future programs, offers the following suggestions:

"In spite of the implication in Section 13, Chapter XIV, of the Constitution and By-Laws which reads as follows 'A Fellow shall present no more than one paper at any Scientific Assembly,' a perusal of the program reveals occasional instances of repetition in the designation of one man to lead in the discussion of papers. Your committee believes this to be a violation of the spirit of the foregoing section which was evidently intended to enable the Council on Scientific Assembly to give the largest possible number of our members opportunity for

appearance on the program. Your committee recommends that this section of the By-Laws be amended so as to preclude a continuance of this practice."

Your committee, while not wishing to restrict helpful discussion of papers, is of the opinion that this principle should be adhered to in the matter of opening discussions on papers, and approves the recommendation. The amended section should therefore read as follows: A Fellow shall present no more than one paper at any Scientific Assembly nor shall any Fellow open the discussion on more than one paper at any Scientific Assembly.

Respectfully submitted. JOHN W. AMESSE, Chairman.

CHARLES S. SKAGGS. JOHN F. HAGERTY.  
S. P. MENGEL. WELLS TEACHNOR SR.

On motions of Dr. Amesse, duly seconded and carried, the report of the reference committee was adopted section by section and as a whole.

#### Report of Reference Committee on Medical Education

Dr. George Blumer, Chairman, presented the following report:

#### RESOLUTION REQUESTING THAT STATE ASSOCIATION BE NOTIFIED WHEN HOSPITAL IS THREATENED WITH REMOVAL FROM ACCREDITED LIST

Your committee approves of the following substitute resolution, which was agreed on after conference with the members of the Colorado State Medical Society concerned in the introduction of the resolution, and recommends its adoption:

*Resolved*, By the House of Delegates of the American Medical Association, that the Council on Medical Education and Hospitals, in all actions concerning the rating of hospitals having to do with the appointment of interns and residents, shall, when a hospital is threatened with removal from the accredited list, permit such hospital to seek the advice and assistance of the authorities of the state medical society.

#### RESOLUTIONS CONCERNING GRADUATES OF MEDICAL SCHOOLS OF FOREIGN COUNTRIES

Your committee approves of the resolutions relating to graduates of medical schools of foreign countries, which were introduced by Dr. William R. Molony Sr., California, and recommends their adoption.

Respectfully submitted.

GEORGE BLUMER, Chairman.  
J. GURNEY TAYLOR.  
J. F. SILER.  
C. A. DUKES.

The report of the reference committee was adopted section by section and as a whole, on motions of Dr. Blumer, duly seconded and carried.

#### Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report, which was adopted on motion duly seconded and carried:

The Judicial Council is of the opinion that most, if not all, of the directories, described in the resolution condemning as unethical the listing of physicians by specialty in directories published by commercial concerns which were introduced by Dr. William R. Brooksher, Arkansas, are but subtle ways of avoiding the pronouncement of the Principles of Medical Ethics concerning solicitation of patients, under a guise of buying a directory when the real intent is the purchase of the publication of the buyer's name in the directory for the purpose of obtaining patients.

The Judicial Council approves the resolutions and recommends their adoption.

#### Report from Section on Practice of Medicine

Dr. J. E. Paullin, Section on Practice of Medicine, presented the following report from the section:

At a business meeting of the Section on Practice of Medicine at the Kansas City session of the American Medical Association, held Wednesday, May 13, 1936, a motion was unanimously carried approving the formation of an American board of internal medicine.

Dr. Paullin moved that this action of the Section on Practice of Medicine be approved. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

#### Report of Reference Committee on Reports of Officers

Dr. E. H. Cary, Chairman, presented the following report: The supplementary report of the Judicial Council has come to the Reference Committee on Reports of Officers. Your committee is reminded of the loss of two of our distinguished fellow physicians through the deaths of Dr. Edwin P. Sloan on Sept. 13, 1935, and Dr. Emmett North on Dec. 27, 1935. These gentlemen were not only members of the Judicial Council but had served faithfully in this House for a great many years. Your committee recommends that the House of Delegates extend its deepest sympathy to the family of each of these servants of the people and the profession of medicine.

Regarding the continued membership in this Association of certain members of county medical societies who have been convicted of felonies and some of whom have served a sentence for felonious acts, your committee suggests that this be brought more forcibly to the attention of the constituent state associations and, through them, to the attention of the component medical societies, that action may be had to eliminate such individuals from their membership so that the American Medical Directory will cease to carry the names of such individuals. The committee recommends that the Council, if it finds it needed, write a suitable amendment to the Constitution and By-Laws, which may be brought to the attention of the House for its approval.

Regarding the extension of original jurisdiction in matters of discipline to the national organization, the Judicial Council suggested in a previous report that it should have the duties and powers now conferred on it, but it should not at any time be placed in an ex parte position. The reference committee at the last session suggested that the Council "submit such amendments to the Constitution and By-Laws of the Association as are necessary to secure the purposes sought." The Judicial Council states that it has found such revision comparatively simple and will submit such amendment at the proper time, and your committee recommends that the House act favorably on the amendment when presented.

Your committee wishes to approve the acts of the Council in its cooperation with the Section on Laryngology, Otology and Rhinology in drawing a resolution to meet the issue raised by members of that section regarding the acceptance of commissions in the purchase of audiometers, as well as suggesting the proper use of such instruments for measuring the acuity of hearing.

Respectfully submitted.

E. R. CUNIFFE

E. A. HINES.

E. H. CARY, Chairman

W. R. BROOKSHER.

WILLIAM ELLINGWOOD

On motions of Dr. Cary, duly seconded and carried, the report of the reference committee was adopted section by section and as a whole.

#### Resolution on Teaching of and Consultation with Optometrists, from Section on Ophthalmology

Dr. Emory Hill, Section on Ophthalmology, presented the following resolution, which on motion of Dr. Hill, seconded and carried, was adopted:

WHEREAS, At the 1934 session of the American Medical Association, a resolution emanating from this section was approved by the House of Delegates, whereby we registered our disapproval of the employment of optometrists by hospitals; and

WHEREAS, At the Atlantic City session of this section we presented resolutions to the House of Delegates of the American Medical Association, which in substance stated that we were opposed to the association of our members and those of the optical trade, and

WHEREAS, These resolutions were adopted by the House of Delegates, and

WHEREAS, There are attempts to force some ophthalmologists to instruct students of optometry; and

WHEREAS, We believe this unwise, unethical and inadvisable, therefore be it

Resolved, That we, the Section on Ophthalmology, instruct our Delegates to the House of Delegates to present this resolution as an expression of our views with the hope that this action will be officially approved and given wide publicity through the pages of THE JOURNAL.

#### Resolution on Advertising of Drugs and on Establishment of Section on Anesthesia, from the Section on Pharmacology and Therapeutics

Dr. N. M. Keith, Section on Pharmacology and Therapeutics, presented the following resolutions from that section:

At the meeting of the Section on Pharmacology and Therapeutics held Wednesday, May 13, 1936, the following resolutions, approved by the executive committee of the section, were unanimously passed by the section, for submission to the House of Delegates:

1. The section requests the House of Delegates respectfully to petition Congress to apply to the advertising of drugs the same regulations that apply to the labeling of original packages of drugs or drug products.

2. The section respectfully requests the House of Delegates to consider favorably the establishment of a Section on Anesthesia, with the understanding that such a section should not be in association with the Section on Pharmacology and Therapeutics.

CHAUNCEY D. LEAKE, Chairman.

RUSSELL HADEN, Secretary.

Dr. Keith moved that these resolutions be adopted. The motion was seconded by Dr. W. F. Braasch, Minnesota, and was lost.

Dr. G. Henry Mundt moved to reconsider, and the motion was seconded by Dr. Walter E. Vest, West Virginia, and carried.

Dr. Keith moved the adoption of the resolution referring to advertising of drugs. The motion was seconded by Dr. G. Henry Mundt, Illinois, and carried.

Dr. Keith moved that the resolution on the establishment of a Section on Anesthesia be adopted. Since this is a responsibility of the Council on Scientific Assembly, the resolution was referred to that body.

#### Resolution on Survey of Public Mental Hospital Services in the United States, from Section on Nervous and Mental Diseases

Dr. Tom B. Throckmorton, Section on Nervous and Mental Diseases, presented the following resolution, which was adopted on motion of Dr. Throckmorton, seconded by Dr. J. Allen Jackson, Pennsylvania, and carried:

WHEREAS, There is need for a wider and more equal distribution of facilities for the care and treatment of the mentally ill, and

WHEREAS, The standards of such care may be improved through the collection and study of data pertaining to mental hospital services in the United States; and

WHEREAS, The measures and facilities for training personnel in nervous and mental disease are of very great importance in bringing about improved standards, and

WHEREAS, A joint cooperative committee has been organized for the conduct of a national survey of Mental Hospital Services; and

WHEREAS, That committee has invited the section on Nervous and Mental Diseases of the American Medical Association to designate two representatives of that section to serve with the committee, therefore be it

Resolved, That the House of Delegates of the American Medical Association approves the designation of two members of the Section on Nervous and Mental Diseases to serve as members of the Cooperative Committee for the Survey of Public Mental Hospital Services in the United States

#### Resolutions on Federal Aid to Hospitals

On motion of Dr. E. H. Cary, Texas, seconded and carried, the unanimous consent of the House was given for the introduction of the following resolutions submitted by Dr. McLain Rogers, Oklahoma.

WHEREAS, It has been reported to the House of Delegates that plans are about to be consummated for the loan of federal money to individuals to enable them to subscribe for stock in an existing cooperative hospital at Elk City, Okla., and

WHEREAS, The hospital referred to is not operated in accordance with the Principles of Medical Ethics of the American Medical Association or in conformity with the special rules of the association governing hospitals and is managed by a physician who has been expelled from his county medical association, and

WHEREAS, The reported plan for federal aid for this or any other hospital similarly situated, whether given directly or indirectly, under the guise of gifts or loans to individual stockholders or prospective stockholders, is contrary to public policy and to the interests of the medical profession, be it

Resolved, That the Board of Trustees be requested to investigate the existing situation immediately, not only with respect to the reported situation in Elk City, Okla., but also with respect to the general policies

of the federal government and to take such action as it deems proper to protect the interests of the public and of the medical profession; and be it further

*Resolved*, That if the Trustees think it wise, a copy of these resolutions be transmitted to the President, the President of the Senate, the Speaker of the House of Representatives, the Director of the Budget, and the Undersecretary of Agriculture in charge of the Rural Resettlement Administration.

The resolutions were adopted on motion of Dr. Rogers, seconded by Dr. Samuel J. Kopetzky, New York, and carried.

### ELECTION OF OFFICERS

Dr. Olin West, Secretary, on request of the Speaker, read Sections 1 and 3, Chapter IV, of the By-Laws referring to nominations.

#### Election of President-Elect

Dr. Charles B. Reed, Illinois, nominated for President-Elect Dr. Charles E. Humiston, Chicago.

Dr. William Weston, Section on Pediatrics, nominated Dr. Isaac A. Abt, Chicago.

Dr. John F. Hagerty, New Jersey, nominated Dr. Wells P. Eagleton, Newark, N. J., and the nomination was supported by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology.

Dr. C. W. Stone, Ohio, nominated Dr. J. H. J. Upham, Columbus, Ohio.

The Speaker declared the nominations, which had been supported by several delegates, closed, and appointed as tellers Drs. J. W. Burns, Texas; C. E. Wagner, Delaware; C. G. Abell, Vermont; J. F. Smith, Wisconsin, and R. W. Fauts, Nebraska.

The Secretary announced that 163 delegates had been recorded as present and that 163 votes had been cast, of which Dr. Charles E. Humiston received 29; Dr. Isaac A. Abt, 53; Dr. Wells P. Eagleton, 9, and Dr. J. H. J. Upham, 72.

The Speaker declared that as no candidate had received a majority vote, a second ballot would be taken, eliminating the name of the one having received the least number of votes, Dr. Wells P. Eagleton.

Dr. Charles B. Reed, Illinois, withdrew the name of Dr. Charles E. Humiston.

A second ballot was taken and the Secretary announced that 163 delegates had recorded their presence and that 161 votes had been cast, of which Dr. Isaac A. Abt received 58 and Dr. J. H. J. Upham 103.

The Speaker declared Dr. J. H. J. Upham, having received the majority of the votes cast, elected President-Elect of the American Medical Association.

#### Election of Vice President

Dr. Frederic E. Sondern, New York, nominated for Vice President Dr. Charles Gordon Heyd, New York.

Dr. Charles B. Reed, Illinois, nominated Dr. Charles E. Humiston, Chicago.

Dr. L. J. Hirschman, Michigan, nominated Dr. Isaac A. Abt, Chicago. Dr. A. A. Walker, Alabama, withdrew the nomination on behalf of Dr. Abt with the consent of the nominator.

On motion of Dr. J. T. Christison, Minnesota, seconded by Dr. Newton T. Saxl, New York, and carried, the nominations were closed.

The Secretary announced that 163 delegates had been recorded as present and that 160 votes had been cast, of which Dr. Charles Gordon Heyd received 104 and Dr. Charles E. Humiston 56.

The Speaker declared Dr. Charles Gordon Heyd, having received the majority of the votes cast, elected Vice President of the American Medical Association.

The vote for Dr. Heyd was made unanimous on request of Dr. Charles B. Reed, Illinois.

#### Address of President-Elect J. H. J. Upham

The Speaker presented the President-Elect, Dr. J. H. J. Upham, Columbus, Ohio, who addressed the House as follows:

*Mr. Speaker, Members of the House:*

I can only very feebly express to you my very deep appreciation of this great honor. When I remember the long list of distinguished leaders of our profession who have filled this

position, and having freshly in mind the splendid record that has just been made by our retiring President, I cannot help but say that I feel the responsibilities of this great office and face them with considerable diffidence.

After more than twenty-five years of close association with this House, as a member and on the Board of Trustees, I have a deep respect and admiration for your calm, deliberative judgment, for your devotion to the high traditions of the medical profession, and your firm determination to support the policy of the individualistic practice of medicine.

It is from that long association with you all that I feel this is just a call to further service for you and with you for the support of the unceasing struggle for the defense of the health of the public, for the progressive advance of the science of medicine, and for the maintenance of the highest type of ethical medical practice.

It is with these ends in view that I pledge you my very best and most sincere efforts.

#### Address of Vice President Charles Gordon Heyd

The Speaker presented the Vice President, Dr. Charles Gordon Heyd, who addressed the House as follows:

*Mr. Speaker, Members of the House of Delegates:*

This entire meeting has been surcharged with emotion. For me to thank you would only be to offer some felicity of expression. Rather should I rededicate myself and make a pledge to you. I wish at this time to bring the laurel of remembrance to the man who is not present here today. In the next few months the people of this country will have to decide a momentous political issue, and in the next few years you gentlemen will have to decide equally momentous issues for the profession of medicine, and I here affirm that I shall give the best of my strength, of my heart, and of my mind to carry out the injunctions that you lay down for me.

#### Election of Secretary

Dr. A. A. Walker, Alabama, nominated Dr. Olin West, Chicago, to succeed himself as Secretary of the American Medical Association. The nominations were closed on motion of Dr. Horace Reed, Oklahoma, seconded and carried.

It was moved by Dr. George W. Kosmak, New York, seconded by Dr. Horace Reed, Oklahoma, and carried, that the rules be suspended so that one vote be cast for Dr. West.

The Speaker cast the ballot of the House for Dr. Olin West as Secretary of the American Medical Association and declared him elected Secretary for the ensuing year.

#### Election of Treasurer

Dr. Rock Sleyster, Chairman of the Board of Trustees, stated that the Board of Trustees nominated Dr. Herman L. Kretschmer, Chicago, as Treasurer. The nomination was seconded by Dr. Harold T. Low, Colorado, and approved by the House.

Dr. Harold T. Low, Colorado, moved that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Herman L. Kretschmer, Chicago, as Treasurer. The motion was seconded by Dr. George W. Kosmak, New York, and carried. The Secretary cast the vote of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer, and the Speaker declared Dr. Kretschmer so elected.

#### Election of Speaker of the House of Delegates

The Vice Speaker, Dr. H. H. Shoulders, took the chair and announced that the next order of business was the election of a Speaker of the House of Delegates.

Dr. Floyd S. Winslow, New York, nominated for Speaker Dr. N. B. Van Etten, New York. The nomination was seconded by Dr. Newton T. Saxl, New York, and Dr. William H. Myers, Georgia.

The nominations were closed on motion of Dr. J. W. Burns, Texas, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

On motion of Dr. J. W. Burns, Texas, seconded by Dr. George W. Kosmak, New York, and carried, the Secretary cast the ballot of the House for Dr. N. B. Van Etten, New York, as Speaker of the House of Delegates. The Vice Speaker declared Dr. N. B. Van Etten duly elected Speaker of the House of Delegates.

**Election of Vice Speaker of the House of Delegates**

The Speaker, Dr. N. B. Van Etten, resumed the chair and declared the next order of business to be the election of a Vice Speaker of the House of Delegates.

Dr. H. B. Everett, Tennessee, nominated for Vice Speaker Dr. H. H. Shoulders, and the nomination was supported by Dr. Samuel J. Kopetzky, New York, and Dr. William H. Myers, Georgia.

On motion of Dr. George W. Kosmak, New York, seconded by several delegates and carried, the nominations were closed.

Dr. H. B. Everett, Tennessee, moved that the Secretary cast the vote of the House for Dr. H. H. Shoulders as Vice Speaker of the House. The motion was seconded by several delegates and carried. The Secretary cast the ballot of the House of Delegates for Dr. H. H. Shoulders, Nashville, Tenn., as Vice Speaker of the House of Delegates, and the Speaker declared Dr. Shoulders elected Vice Speaker.

**Election of Trustee**

The Speaker declared the next order of business to be the election of a Trustee for a term of five years to succeed Dr. Thomas S. Cullen, whose term expired this year.

Dr. William Weston, Section on Pediatrics, nominated Dr. Thomas S. Cullen, Baltimore, to succeed himself as Trustee, and the nomination was supported by Dr. Harvey B. Stone, Maryland.

The nominations were closed on motion of Dr. Frederic E. Sondern, New York, seconded by several delegates and carried, and the Secretary was instructed to cast the vote of the House for Dr. Thomas S. Cullen, Baltimore, as Trustee, on motion of Dr. H. B. Everett, Tennessee, seconded by several delegates and carried.

The Secretary cast the ballot of the House for Dr. Thomas S. Cullen as Trustee for a term of five years, and the Speaker declared Dr. Cullen elected Trustee.

**Nominations for Standing Committees**

Dr. Olin West, Secretary, stated that he had a telegram signed by Dr. J. Tate Mason, President, in which Dr. Mason submitted the following nominations to the House of Delegates:

Judicial Council: Dr. Walter F. Donaldson, Pittsburgh, to succeed himself for a term ending in 1941; Dr. Lloyd Noland, Fairfield, Ala., to succeed Dr. Edward P. Sloan, deceased, for a term ending in 1937, and Dr. Edward R. Cunniffe, New York, to succeed Dr. Emmett P. North, deceased, for a term ending in 1939.

Council on Medical Education and Hospitals: Dr. Fred W. Rankin, Lexington, Ky., to succeed Dr. M. W. Ireland, for a term ending in 1943.

Council on Scientific Assembly: Dr. J. C. Flippin, University, Va., to succeed Dr. Cyrus C. Sturgis, for a term ending in 1941.

On motion of Dr. Brien T. King, Washington, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, the nominations were confirmed.

**Election of Affiliate and Associate Fellows****APPLICANTS FOR AFFILIATE FELLOWSHIP APPROVED BY THE  
COUNCIL ON SCIENTIFIC ASSEMBLY**

Chenoweth, Lincoln C., Joplin, Mo.  
Dunlop, H. E., Brooklyn.  
Fleming, Walter S., Mt. Vernon, N. Y.  
Hocking, George, Baltimore.  
Jerowitz, Herman D., Kansas City, Mo.  
Jolly, W. J., Oklahoma City.  
Lewis, Andrew L., Sumner, Mo.  
McCreery, Forbes R., New York.  
Melvin, J. Tracy, Porterville, Calif.  
Miller, Samuel H., Joplin, Mo.  
Oyen, A. B., Chicago.  
Runyon, Emily C., Richmond, Va.  
Schorer, Cornelia B. J., Foxboro, Mass.  
Sweemer, William, Milwaukee.  
Veckl, Victor, San Francisco.  
Winslow, Randolph, Baltimore.

**APPLICANTS FOR ASSOCIATE FELLOWSHIP FROM AMERICAN  
MEDICAL MISSIONARIES APPROVED BY THE  
JUDICIAL COUNCIL**

Beusfield, Cyril E., Chaoyang, China.  
Davies, Gwilym, Ebolowa, Cameroun, West Africa.  
Dunning, Norma P., Kalkapur, India.  
Herring, James H., Yeung Kong, South China.

Judd, Walter Henry, Fenchow, Shansi, China.  
Lyman, Richard S., Peiping, China.  
Newman, Frank W., Peiping, China.  
Thaeler, Arthur D. Jr., Bilwas Karma, Nicaragua, C. A.

**APPLICANTS FOR ASSOCIATE FELLOWSHIP NOMINATED BY  
THE SECTIONS INDICATED****LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY**

Braun, Herman, Irvington, N. J.

**PHARMACOLOGY AND THERAPEUTICS**

Shoemaker, Harold A., Oklahoma City.

**PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH**

Gordon, J. E., Bucharest, Rumania.  
Grubb, Thomas C., Springfield, Ill.

On motion of Dr. Frederic E. Sondern, New York, seconded by Dr. James E. Paullin, Section on Practice of Medicine, and carried, the nominations were approved and the nominees declared elected Affiliate or Associate Fellows as indicated.

**Place of 1937 Annual Session**

The Speaker announced that the next order of business was the selection of the 1937 annual session and called on the Board of Trustees for nominations.

Dr. Rock Sleyster, Chairman of the Board of Trustees, presented the following report:

Mr. Speaker, invitations meeting the requirements of the Constitution and By-Laws have been received from Cincinnati, Philadelphia and Atlantic City. The facilities of these cities have been investigated by the Board, and the Board reports that those of Philadelphia and Atlantic City are adequate.

The Speaker declared that Philadelphia and Atlantic City nominations were in order.

Dr. Arthur C. Morgan, Pennsylvania, extended an invitation from the medical profession in Philadelphia and in Pennsylvania to have the American Medical Association meet in that city in 1937.

Dr. Walt P. Conaway, New Jersey, extended an invitation from the medical profession of Atlantic City and of New Jersey to have the Association meet in that city in 1937.

The nominations of Philadelphia and Atlantic City were seconded by numerous delegates.

The Speaker requested that the ballot be spread, and the Secretary announced that 163 delegates had been recorded as present and that 139 votes had been cast, of which Philadelphia received 69 and Atlantic City, N. J., 70.

The Speaker declared that the House of Delegates had selected Atlantic City, N. J., for its 1937 session.

**Message of Sympathy**

On motion of Dr. H. A. Luce, Michigan, seconded by Dr. C. S. Gorsline, Michigan, and carried, the House of Delegates extended, through the Secretary, to Dr. R. G. Leland, Director of the Bureau of Medical Economics, its sympathy and its well wishes for his speedy recovery.

**Vote of Appreciation**

Dr. J. W. Burns, Texas, moved that the House of Delegates extend its most hearty appreciation to the local medical profession, to the press, to the citizens, and to every one who had contributed so much to the comfort and entertainment of the Association during the annual session in Kansas City. The motion was seconded by Dr. A. A. Ross, Texas, and carried.

**Greetings to Dr. G. H. Simmons and Dr. Irvin Abell**

The Secretary, Dr. Olin West, announced that he had received word from Dr. G. H. Simmons, Editor and General Manager Emeritus of the Association, expressing his regret at his inability to attend the Kansas City session. The Secretary also announced that Dr. Irvin Abell, a member of the House of Delegates, and Chairman of the Council on Scientific Assembly, was unable to be present because of illness.

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. H. B. Everett, Tennessee, and carried, the Secretary was instructed to send words of greeting and good wishes to Dr. G. H. Simmons and to Dr. Irvin Abell.

The House of Delegates adjourned sine die at 4:30 p. m.

(To be continued)



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Personal.**—Dr. Thurston D. Rivers has been appointed medical director of the Montgomery Tuberculosis Sanatorium, Montgomery, succeeding Dr. Beverly Woodfin Cobbs, resigned.

**State Medical Election.**—Dr. Lloyd Noland, Fairfield, was chosen president of the Medical Association of Alabama at the recent annual meeting. Birmingham was designated as the place for the next annual meeting, April 20-22.

### ARIZONA

**State Medical Election.**—Dr. Chester R. Swackhamer, Superior, was chosen president-elect of the Arizona State Medical Association at the annual meeting in Nogales, recently, and Dr. Jesse D. Hamer, Phoenix, was installed as president. Yuma was designated as the place for the next annual meeting, in April 1937.

**Public Health Meeting.**—The Arizona Public Health Association held its ninth annual meeting in Tucson, April 20-22. Speakers included:

- Dr. Frederick T. Foard, San Francisco, Social Security Act.
- Dr. Edith P. Sappington, San Francisco, Maternity and Infant Work in Arizona.
- Dr. Charles A. Donahdson, Tucson, Silicosis and Tuberculosis.
- Homer N. Calver, New York, Control of Scarlet Fever.
- Dr. William R. Leverton, Tucson, Significance of Heart Murmur in School Children.
- Dr. Charles A. Thomas, Tucson, Tuberculosis in Childhood.

The annual dinner was held Tuesday evening. David B. Treat, health department, Phoenix Union High School, Phoenix, was the speaker; his subject was entitled "Public Health in Relation to Secondary Schools."

### CALIFORNIA

**Dr. Meyer Honored.**—The honorary degree of doctor of medicine was conferred on Karl F. Meyer, Ph.D., director of the Hooper Foundation for Medical Research, University of California Medical School, San Francisco, at a special convocation of the faculty, alumni and invited guests of the College of Medical Evangelists of Los Angeles, April 23. The meeting, which followed a dinner, was addressed by Dr. Meyer on "Neurotropic Viruses and Diseases Caused by Them." Other speakers were Dr. Percy T. Magan, Los Angeles, president of the medical college; Dr. Howard Morrow, San Francisco, president, California State Department of Health; Dr. Edward M. Pallette, Los Angeles, president-elect of the state medical association, and Dr. Wilton L. Halverson, Pasadena, health officer of Pasadena. Dr. Benton N. Colver, Glendale, acted as toastmaster. A native of Basle, Switzerland, Dr. Meyer received the degree of doctor of philosophy at the University of Zurich in 1924. He is 51 years of age and has been with the University of California since 1914.

**Deaths from Accidental Causes.**—In 1935 there were 5,774 deaths in California due to external causes as compared with 5,567 such deaths in 1934 and 5,153 in 1933. This increase occurred in spite of a reduction in the total number of motor vehicle deaths and may be attributed largely to an increased number of falls in the home, according to the state health department. Falls in the home were responsible for 805 deaths last year as compared with 662 in 1934 and 660 in 1933. There were 2,786 deaths from motor vehicle accidents, 1,043 attributed to collisions with pedestrians, 854 to collisions with other motor vehicles, 200 to collisions with fixed objects and 514 of these deaths were in noncollision accidents. Eighty-seven deaths were due to collisions with railroad trains, forty-eight with electric cars, thirty-seven with bicycles and three with horse drawn vehicles. Deaths in home accidents totaled 1,398, 805 due to falls, 251 to conflagrations, burns and explosions, ninety-three to poisonings, sixty to absorption of poisonous gases, forty-three to firearms, and thirty-nine to mechanical suffocations, twenty-seven of which were deaths of infants. A total of 1,045 deaths was recorded in public accidents; 324 attributed to drowning, 211 to falls, 118 to railroad accidents and sixty-seven to street car accidents not involving motor

vehicles. There were forty-nine deaths in water transportation and forty-nine in air transportation. There were 477 occupational deaths recorded, 142 of which were due to accidents in general trades.

### DISTRICT OF COLUMBIA

**Bill Introduced.**—S. 3514 has been reported to the House, with amendments, proposing to regulate the manufacturing, dispensing, selling and possession of narcotic drugs in the District of Columbia.

### GEORGIA

**Public Health Conferences.**—The Medical Association of Georgia, cooperating with the state board of health and the U. S. Public Health Service, will begin a series of conferences on public health, June 15, to be held in each district of the state. The conferences will be locally sponsored by the officers of the district medical society. One team will open in Rome, June 15, with a discussion on pediatrics, obstetrics and venereal diseases, continuing in a different district the next day with the same program. A second team will open in Rome, June 23. Its program will deal with heart disease, cancer and preventive inoculations. The first team closes its series in Savannah June 26 and the second, July 3.

**Health at Atlanta.**—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended May 16, indicate that the highest mortality rate (21.1) appears for Atlanta and for the group of cities as a whole, 11.9. The mortality rate for Atlanta for the corresponding period last year was 13.7 and for the group of cities, 11.7. The annual rate for eighty-six cities for the twenty weeks of 1936 was 13.4 as against a rate of 12.5 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

### IDAHO

**Society News.**—Dr. Clarence L. Lyon, Spokane, addressed the North Idaho District Medical Society in Lewiston recently on convulsions in children. At a recent meeting Drs. Arthur Betts and James M. Nelson, Spokane, presented papers on "X-Ray Diagnosis of Organic Pathology of the Colon" and "Acute and Chronic Empyema" respectively.

### ILLINOIS

**Meeting of Bacteriologists.**—The Society of Illinois Bacteriologists held its annual meeting, May 1, in Chicago, at the Allerton Hotel. The following spoke:

- W. D. Dotterer, Ph.D., Bacteriology as an Aid to the Milk Industry.
- C. S. Boruff, Peoria, Practical Applications of Fermentology in the Distilling Industry.
- H. J. Shaughnessy, Ph.D., Nell Hall, J. O. Alberts, M.S., and F. Frierer, state department of public health, Springfield, Experiences with the Use of Special Methods in the Isolation and Identification of Typhoid Bacilli from Blood, Feces and Urine.
- Drs. Gail M. Dack, Lester R. Dragstedt and Theodore E. Heinz, Bacteriology of Chronic Ulcerative Colitis.

### Chicago

**Society News.**—The Chicago Orthopedic Society was addressed, May 22, by Drs. Géza de Takáts on "Reflex Dystrophy of the Extremities"; Arthur Krida, New York, "Synovectomy" and "Crucial Ligament Repair," and Leo Mayer, New York, "Tendon Surgery."—At a meeting of the Chicago Society of Allergy, May 18, Drs. Ralph H. Scull and Francis L. Foran discussed "Hypersensitiveness in Chronic Flexural Eczema: A Study of Fifty-Five Cases"; Townsend B. Friedman, "Allergy in Children," and Leon Unger, "Asthma in Children: Results of Treatment."—The Chicago Neurological Society was addressed, May 21, by Drs. Leroy H. Sloan and Abraham S. Freedberg on "Epileptiform Manifestations with Hypersensitivity of the Carotid Sinuses"; Theodore T. Stone and Eugene I. Falstein, "Huntington's Chorea," and Samuel B. Broder, "Sleep Induced by Sodium Amytal: An Abridged Method for Use in Mental Illness."—Speakers before the Chicago Society of Internal Medicine, May 25, included Drs. Andrew C. Ivy on "Humoral Transmission of Nerve Impulses" and Joseph L. Miller, "Amoebiasis, with Especial Attention to the High Incidence of Carriers."—At a meeting of the Chicago Ophthalmological Society, May 25, Dr. James E. Lebensohn read a paper entitled "Concerning Certain Commercial Aspects of the Spectacle Industry," and Dr. Elias Selinger, "Retinal Angiospasm."

## INDIANA

**Cancer Committee Formed.**—The *Journal of the Indiana State Medical Association* announces the appointment of a cancer committee for the association. Members are Drs. Charles W. Myers, Indianapolis, Edward M. Pitkin, Martinsville, and Paul W. Ferry, Kokomo.

**Research on Dental Diseases.**—Announcement is made of the plan to establish a research center at the Indiana University School of Dentistry, Indianapolis, for the study of dental diseases of children. According to the *Caduceus*, the federal government will equip a clinic at the dental school with fifteen modern units so that research may begin next fall.

**Graduate Courses.**—At the annual postgraduate course of the Indiana State Medical Association in the Claypool Hotel, Indianapolis, April 8-9, speakers were:

Dr. Gatewood, Chicago, Malignant Tumors of the Stomach and of the Bowel.

Dr. Charles Wolferth, Philadelphia, Observations on the Mechanism and Clinical Interpretation of Heart Sounds.

Dr. Walter W. Hamburger, Chicago, Heart Diseases.

Dr. Dean Lewis, Baltimore, Neoplastic Diseases.

The Indiana University School of Medicine sponsored its annual graduate course, April 6-11. Guest speakers included Drs. Ralph H. Major, Kansas City; Max M. Peet, Ann Arbor, and Willis C. Campbell, Memphis, Tenn.

## IOWA

**State Medical Election.**—Dr. Edward M. Myers, Boone, was chosen president-elect of the Iowa State Medical Society at the recent annual meeting in Des Moines, and Dr. Prince E. Sawyer, Sioux City, was inducted into the presidency. The next annual session will be held in Sioux City, May 12-14, 1937.

**Graduate Meeting in Sidney.**—At the regular meeting of the Southwestern Iowa Postgraduate Medical Society in Sidney, recently, the program was made up of ten minute papers presented, among others, by the following Omaha physicians:

George P. Pratt, Coronary Disease.

Earl C. Sage, Treatment of Toxemias of Pregnancy.

Thomas D. Boler, Treatment of Acute Conditions of the Prostate.

Frank M. Conlin, Emergencies of the Diabetic.

Robert D. Schrock, Treatment of Highway Accidents.

Abram E. Bennett, Artificial Fever Treatment.

Dr. Carl H. Davis, Milwaukee, presented a motion picture film on "Parturition in Monkeys."

**Society News.**—Dr. Allan G. Felter, Van Meter, discussed "Factors in the Management of the Failing Heart" before the Dallas-Guthrie County Medical Society in Panora, April 16, and Dr. Keith W. Diddy, Perry, "Coronary Calculus."—At a meeting of the Jasper County Medical Society in Newton, April 7, Dr. Francis A. Ely, Des Moines, spoke on "Eye Symptoms in Neurology."—The Pottawattamie County Medical Society was addressed by Dr. Walter D. Abbott, Des Moines, May 25; his subject was "Presacral Neurectomy in the Treatment of Certain Pelvic, Bladder and Bowel Disorders."—At a meeting of the Sac County Medical Society in Odebolt, April 13, Drs. Emmett McMahon and John Harry Murphy, both of Omaha, spoke on infectious diseases and fatigue in children, respectively.—Dr. Irving H. Borts, Iowa City, addressed the Woodbury County Medical Society in Sioux City, April 22, among others, on "Laboratory Diagnosis of Malta Fever and the Use of Brucellin in Treatment" and Dr. Carl F. Jordan, Des Moines, "Undulant Fever in Iowa."

## LOUISIANA

**Annual Longer Life Week.**—The Orleans Parish Medical Society sponsored its annual "longer life week," May 18-23, devoting the entire week to an educational program on appendicitis. Letters were sent to members of the society asking them to use stickers warning of the dangers of purgatives in abdominal pain on their bills and correspondence during May; to druggists, asking them to use similar stickers on all laxatives and purgatives sold during "longer life week" and to display posters; to business houses and stores asking them to display similar posters; to schools, colleges, parent-teacher associations, social and business clubs and similar organizations asking for permission to address them on acute appendicitis. A joint meeting of the medical students of Tulane and Louisiana State universities was devoted to a consideration of appendicitis. At a symposium of the Orleans Parish Medical Society, May 11, speakers included Drs. Frederick F. Boyce, Oscar W. Bethea, John Signorelli, Carl C. Dauer, Ambrose H. Storck and George D. Feldner. A report on the mortality of acute appendicitis in eight New Orleans hospitals during the past two years was presented by Dr. Nathan H. Polmer.

**Bills Introduced.**—H. 19 proposes to levy an annual license tax of \$300 on each person, association, firm or corporation selling patent medicines at wholesale or at retail for each and every place of business in the state in which such patent medicines are sold. "Patent medicines" within the meaning of the bill are defined to include any and all articles intended to be used for medicinal purposes which are prepared from secret formulas and placed in containers for sale without further preparation. H. 60 purports to prohibit the sale or distribution of any patent medicine, drug, ointment, salve, antiseptic, tooth paste, mouth wash, hair dye, depilatories or other medicament unless there is first filed with the state board of health a sworn statement listing the ingredients and quantities contained in the particular article and obtaining from the board a certificate of approval authorizing the sale or distribution of such article in the state. H. 88, to amend the Narcotic Drug Act, proposes that any person violating any provision of the act be punished on conviction by imprisonment, with or without hard labor, for not less than six months nor more than five years. The present law provides that a convicted violator shall be confined at hard labor for not less than twenty months nor more than five years. H. 99 proposes to prohibit a drug retailer from using advertising which (1) is intentionally inaccurate in any material particular or (2) misrepresents merchandise, in respect to its use, trademark, grade, quality, quantity, size, origin, material, content or preparation or (3) lays claim to a policy or a continuing practice of generally underselling competitors.

## MAINE

**State Medical Meeting at Rangeley.**—The eighty-fourth annual session of the Maine Medical Association will be held in Rangeley, June 21-23, with headquarters at the Rangeley Lake Hotel, under the presidency of Dr. John L. Johnson, Bangor. Morning sessions will be devoted to conferences on miscellaneous topics. Tuesday afternoon the program will be presented by the following physicians:

William V. Cox, Lewiston, Recent Advances in Gastro-Intestinal Surgery.

Ralph L. Barrett, New York, Office Treatment of Endocervicitis.

Elton K. Blaisdell, Portland, More Recent Developments in Diabetic Treatment.

Carl E. Blaisdell, Bangor, Hematuria.

Doris A. Murray, Washington, D. C., Maternal Child Health and Crippled Children's Programs Under the Social Security Act.

A cancer symposium will be conducted Tuesday afternoon. Out of town speakers on this program will include Drs. Elliott C. Cutler, Moseley professor of surgery, and Soma Weiss, associate professor of medicine, Harvard Medical School, Boston.

## MASSACHUSETTS

**The Gay Lecture.**—Dr. William Dacre Walker, Andover, presented the George Washington Gay Lecture at Tufts College Medical School, April 22. His subject was "What the Small Town Doctor Does." The George Washington Gay Lectureship Fund was established in 1926 with a gift from Dr. George W. Gay, Chestnut Hill, for lectures at Tufts on medical ethics and the art and practice of medicine.

**Medical School Participates in Tercentenary.**—Demonstrations, informal discussions, special clinics and four symposiums will constitute the program of Harvard Medical School, Boston, September 14-15, for its observance of the tercentenary of Harvard University. The university's celebration begins July 1. The annual meeting and dinner of the Harvard Medical Alumni Association will be held on the evening of September 15 in Vanderbilt Hall. This meeting has been postponed from its usual time in June in honor of the tercentenary and to encourage the return at this time of as many graduates as possible. The symposiums will be presented by the faculty of the medical school on the following subjects: nutrition and the deficiency diseases, under the chairmanship of Dr. George R. Minot; nervous system, central and sympathetic, chairman Dr. Walter B. Cannon; infectious diseases, chairman Dr. Hans Zinsser, and the endocrine glands, chairman Dr. James Howard Means.

## MICHIGAN

**University News.**—Dr. Raymond W. Waggoner, associate professor of neurology, University of Michigan Medical School, Ann Arbor, has been granted a leave of absence from September 1 to March 1, 1937; he plans to spend this time in research in England. A gift of \$5,000 has been given by Mr. James Inglis, Ann Arbor, to the University of Michigan to establish the James and Elizabeth Inglis Fund for surgical research.

Dr. Harley A. Haynes, medical director of the University Hospital, has been appointed acting medical director of the state psychopathic hospital by the board of regents.

**State Society Night.**—Officers of the Michigan State Medical Society were guests of the Oakland County Medical Society at the Birmingham Community House, Birmingham, April 21. This was the first "state society night" in Oakland County; others have been observed in Jackson and Genesee counties. State society officers present at the meeting included Drs. Grover C. Penberthy, Detroit, president; Henry Cook, Flint, chairman of the council; Frank E. Reeder, Flint, speaker of the house of delegates; Henry R. Carstens, Detroit, chairman of the finance committee; James H. Dempster, Detroit, editor of the state journal; Howard H. Cummings, Ann Arbor; Theodore Heavenrich, Port Huron, and Andrew S. Brunk, Detroit, counselors; Clifford T. Ekelund, Pontiac, and Mr. William J. Burns, secretary and executive secretary respectively. Dr. Frederick A. Baker, Pontiac, was toastmaster.

### MINNESOTA

**Memorial to Dr. Millard.**—A monument erected on the grave of Dr. Perry H. Millard, the first dean of the University of Minnesota Medical School, Minneapolis, will be dedicated in Fairview Cemetery, Stillwater, June 7. In addition, a suitable plaque is to be placed in the university and surplus funds collected for the memorial are to be turned into the general fund of the Medical Alumni Association. The principal address at the dedication ceremonies, June 7, will be delivered by Dr. James T. Christison, St. Paul. Other speakers will include Dr. William J. Mayo, Rochester, a regent of the university; Dr. Elias P. Lyon, Minneapolis, dean of the medical school; Guy S. Ford, LL.D., dean of the graduate school, and Dr. Edward A. Meyerding, St. Paul, secretary of the Minnesota State Medical Association. The medical department of the medical school, including dentistry and pharmacy, was created in 1888. Dr. Millard was named dean and held the position until his death in 1897. In 1893 a loan of \$65,000 from Dr. Millard made possible the construction of the old Millard Hall and the old chemistry building, and in 1895 the laboratory of medical science was added.

### MONTANA

**Society News.**—The Hill County Medical Society was addressed at Havre, April 8, by Dr. Ernest R. Anderson, Minneapolis. Dr. Anderson also addressed the Cascade County Medical Society at Great Falls, April 9.

**Personal.**—Dr. Elmer G. Balsam, Billings, has been reappointed a member of the Montana State Board of Health. Dr. John H. Garberson, Miles City, has been reappointed to serve seven years as a member of the Montana Medical Examining Board.

### NEVADA

**Dr. Worden Named State Health Officer.**—Dr. John E. Worden, Carson City, has been appointed state health officer of Nevada, according to the *American Journal of Public Health*. He succeeds Dr. Edward E. Hamer. Dr. Worden is a graduate of Northwestern University Medical School, Chicago, class of 1899.

### NEW JERSEY

**Personal.**—Dr. Augustus L. L. Baker, Dover, has been appointed a member of the state board of health, to succeed Dr. Samuel A. Cosgrove, Jersey City, whose term expired. Dr. Wells P. Eagleton, Newark, was guest of honor at a dinner given by the medical staff and trustees of the Newark Eye and Ear Infirmary, April 26. The occasion was the twenty-fifth anniversary of his appointment as medical director of the infirmary.

**State Medical Meeting at Atlantic City.**—The one hundred and seventieth annual meeting of the Medical Society of New Jersey will convene at Haddon Hall, Atlantic City, June 2-4, under the presidency of Dr. Marcus W. Newcomb, Brown's Mills. Guest speakers will include the following physicians:

James R. McCord, Atlanta, Ga., Conservative Treatment of Eclampsia.  
Walter E. Lee, Philadelphia, Role of Surgery in Pulmonary Tuberculosis.

Israel M. Rabinowitch, Montreal, Medical Complications in Diabetes Mellitus.

Arthur C. Christie, Washington, Medical Progress Under the Leadership of the Medical Profession.

William Gregory Cole, New York, Roentgenologic Characteristics of Different Types of Pneumonia.

Burrill B. Crohn, New York, Prognosis in Regional Ileitis.

There will be a symposium on tumors of the reticulo-endothelial system, presented by New Jersey physicians and Dr. Ira I. Kaplan, New York. Drs. Rudolph V. Gorsch, New

York, and Carroll D. Smith, Paterson, will conduct a symposium on the injection therapy of hemorrhoids. The woman's auxiliary to the state medical society will hold its ninth annual meeting during the three days of the state society session. The auxiliary will also have charge of the president's banquet and ball Tuesday evening, when Dr. Newcomb will deliver his presidential address, and Dr. Francis R. Haussling, Newark, president-elect, his inaugural speech. Mr. James Farrell, editor, *Atlantic City Union*, will also give an address entitled "The Medical Profession and the Press," and the awards of merit will be presented by Dr. Thomas S. Cullen, Baltimore.

### NEW YORK

**Personal.**—Dr. Harold E. Himwich, who joined the faculty of Albany Medical College in October 1935 as associate professor of physiology, has been made professor of physiology and pharmacology. William D. Coolidge, Ph.D., director of the research laboratories of the General Electric Company, Schenectady, has been made an honorary associate member of the Pan American Medical Association. Dr. Stanton Curry, Peekskill, was guest of honor at a banquet given by physicians of Peekskill, March 9. He has practiced in Peekskill thirty-eight years. A. Bertrum Lemon, Ph.D., professor of materia medica, University of Buffalo, since 1922, has been named dean of the school of pharmacy to succeed Dr. Willis G. Gregory, who has been dean for forty-six years. Dr. Lemon has been affiliated with the university since 1916.

**New York's Health in 1935.**—Vital statistics for New York for 1935 showed a death rate of 10.8 per thousand of population, the lowest rate in half a century, according to *Health News*. The birth rate (13.5 per thousand of population) was also the lowest on record. Infant mortality showed a rate of 48 per thousand live births and maternal mortality a rate of 48.5 per 10,000 of all births; both were the lowest ever recorded. New low rates were recorded for typhoid, pneumonia, bronchitis, tuberculosis and accidents. The rate for diphtheria (0.7 per hundred thousand of population) was the lowest ever known in the state. Greater prevalence of measles, scarlet fever and whooping cough resulted in rises in death rates from these diseases. Almost three fourths of the deaths were attributed to heart disease, cancer, pneumonia, nephritis, cerebral hemorrhage, accidents and tuberculosis. The suicide rate (15.3) was the lowest since 1926 and the homicide rate (4.1) the lowest for twenty years. For the first time in nine years the death rate from diabetes did not increase (30.8).

### New York City

**Biggs Memorial Lecture.**—Lord Horder of London delivered the eleventh Hermann Michael Biggs Lecture at the New York Academy of Medicine, May 7, on "Eugenics as a Form of Preventive Medicine."

**University News.**—The Rockefeller Foundation has appropriated \$10,000 to Columbia University, with the provision that \$8,000 is to be used for research on poliomyelitis and \$2,000 for research on speech disturbances and other neurologic problems. The annual Alumni Day of the Cornell Medical Alumni Association was observed, May 7. A scientific program was presented during the day at the college and New York Hospital, and in the evening there was a banquet at the Biltmore.

**Memorial to Dean Miller.**—The Long Island College of Medicine announces the foundation of a lectureship in memory of the late Adam Miller, M.A., for many years professor of anatomy and dean of the school from 1922 until his death in May 1935. The lectureship is made possible by a contribution from Theta chapter of Phi Lambda Kappa. Its scope is not limited, but it is anticipated that the subjects will usually be related to anatomy and embryology, as Dean Miller was identified with that phase of research and education. The first lecture will be delivered in the autumn.

**Society News.**—The Medical Society of the County of Queens was addressed, April 21, by Drs. Haven Emerson on "A Study of Organized Medical Care in the Metropolitan Area"; Alfred E. Shipley, "Administrative Progress in the Department of Hospitals," and Harry P. Mencken, "Present Day Hospital Problems." The Medical Society of the County of New York held a meeting in conjunction with the Registered Nurses Association of New York County, May 25, with the following speakers: Mary M. Roberts, editor, *American Journal of Nursing*, on "The Findings of the Committee on the Grading of Nursing Schools"; Marion W. Sheahan, director of the division of nursing, state department of health, on "How Legislation Might Improve Conditions in Nursing," and Lulu St. Clair, executive secretary, Joint Committee on Community Nursing Service, "How Nurses and Doctors Can Cooperate

for Better Community Nursing Service."—Dr. Edward J. Hyland, Jamaica, addressed the Queensboro Surgical Society, May 18, on "Gunshot Wounds of the Abdomen."

### OKLAHOMA

**Society News.**—Drs. Robert M. Howard and Herbert Dale Collins, Oklahoma City, addressed the Creek County Medical Society, Bristow, April 2, on the thyroid gland and appendicitis, respectively.—Drs. Wesley R. Mote, Ardmore, and James I. Hollingsworth, Waurika, among others, addressed the Carter, Stephens and Jefferson Counties Medical Society, Healdton, recently, on "Complications and Management of Respiratory Infections" and "Gallbladder Diseases of Young Subjects" respectively.

**State Medical Election.**—Dr. Samuel A. McKeel, Ada, was chosen president-elect of the Oklahoma State Medical Association at the annual meeting in Enid recently, and Dr. George R. Osborn, Tulsa, was installed as president. Tulsa was designated as the place for the 1937 meeting. At the meeting of the house of delegates, April 7, it was decided to double the membership dues. Since this money will not be available until January, it was agreed that each county be requested to contribute to maintain a permanent office in Oklahoma City.

### PENNSYLVANIA

**District Meeting.**—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, addressed the annual meeting of the Third Council District of the Medical Society of the State of Pennsylvania at Skytop Lodge in Monroe County, May 23, on "Medicine and the Changing World." The following officials of the state society made five-minute talks: Drs. Alexander H. Colwell, Pittsburgh, president; Maxwell J. Lick, Erie, president-elect; William H. Mayer and Chauncey L. Palmer, Pittsburgh, and Francis F. Borzell, Philadelphia, chairmen respectively of the committees on public relations, public health legislation and medical economics; Thomas R. Gagon, Pittston, member of the committee on public health legislation, and Mrs. Harry M. Kraemer, Scranton, counselor for the Woman's Auxiliary of the third district.

#### Philadelphia

**Interns' Night.**—May 13 was "Interns' Night" for the Philadelphia County Medical Society. Interns made the following presentations:

- Dr. Paul B. Patton, Graduate Hospital, Effect of Estrogenic Substances in Certain Cases of Diabetes Mellitus
- Dr. Donald Wilson Hastings, Philadelphia General Hospital, Difficulties in Differential Diagnosis of Brain Tumor in Older Age Groups
- Dr. Louis Spitz Jr., Mount Sinai Hospital, Ketogenic Diet in Urinary Tract Infections.
- Drs. Forrest F. Smith Jr. and William F. Hartman, Methodist Episcopal Hospital, A Case of Full Term Tubal Pregnancy with Removal of Fetus Four and One-Half Months After Calculated Term

#### Pittsburgh

**Society News.**—Speakers before the Pittsburgh Surgical Society, April 17, were Drs. John H. Alexander, on "Tuberculous Granuloma of the Cecum"; John W. Stinson, "A New Procedure in Herniorrhaphy," and Gustav F. Berg, "Open Reductions in Fractures."—Among other speakers at a meeting of the Allegheny County Medical Society, May 19, Dr. Wilfred J. Finegold presented the prize-winning case history in the society's contest, on "A Case of *Tabes Dorsalis* and *Myeloid Chloroma*."—Drs. Theodore O. Elterich and Harold G. Kuehner, among others, addressed the Pittsburgh Academy of Medicine, May 12, on "Hypothyroidism in Childhood: Its Detection and Management" and "Trauma Within the Knee Joint and Its Treatment" respectively.

### RHODE ISLAND

**Obstetrical Meeting.**—The eighth spring meeting of the New England Obstetrical and Gynecological Society was held in Providence, May 28. Dr. Fred L. Adair, Chicago, was guest speaker on "Obstetric Hemorrhages." In addition, clinics were held in various hospitals and the following physicians, among others, presented papers:

- John G. Walsh, Management of 100 Cases of Placenta Praevia at the Providence Lying-In Hospital.
- Frank T. Fulton, Treatment of Heart Disease Complicating Pregnancy and Labor in 609 Cases at the Providence Lying-In Hospital.
- William P. Bufum and Robert M. Lord, Treatment of Premature Infants, with Demonstration of an Inexpensive Oxygen Box.
- Edward S. Brackett, Deduction to Be Drawn from 108 Maternal Deaths at the Providence Lying-In Hospital.
- George W. Waterman, Presacral Nerve Resection.
- Thomas W. Grzeben, Parhyterectomy versus Supracervical Hysterectomy.
- John F. Murphy, Gonorrhea in the Female.

### TEXAS

**Society News.**—Drs. Isidore Cohn, New Orleans, and Leroy Long, Oklahoma City, were guest speakers at the semiannual meeting of the Texas Surgical Society at Fort Worth in April. Dr. Cohn spoke on "Lymphaticovenous Fistula" and Dr. Long on "Prevention of Postoperative Intestinal Incompetence."—At a meeting of the Kaufman County Medical Society, Terrell, April 7, speakers were Drs. Percy M. Girard, Dallas, on "Fractures of the Elbow"; Ozro T. Woods, Dallas, "Treatment of Starvation," and Delmas T. Friddell, Terrell, "Chronic Ulcerative Colitis."—Drs. Van D. Rathgeber, Fort Worth, and Berry L. Jenkins, Clarendon, addressed the Tarrant County Medical Society, Fort Worth, April 7, on "Use of Procaine Crystals as a Topical Anesthetic in Nasal Surgery" and "Encephalitis Lethargica" respectively.

### GENERAL

**Changes in Status of Licensure.**—The California State Board of Medical Examiners reports the following action taken at its meeting in Los Angeles, March 9-12:

- Dr. James W. Brownlie, Vallejo, placed on probation for three years without federal narcotic permit or possession of narcotics.
- Dr. Manford Dummit, Compton, placed on probation for five years without federal narcotic permit or possession of narcotics.
- Dr. Homer L. Keeney, San Francisco, placed on probation for five years without federal narcotic permit or possession of narcotics.
- Dr. Walter F. Fike, Oakland, placed on probation for five years, without federal narcotic permit or possession of narcotics.

**Society News.**—Dr. Ross McC. Chapman, Towson, Md., was chosen president-elect of the American Psychiatric Association at the annual meeting in St. Louis, May 4-8. Dr. Charles MacFie Campbell, Boston, was installed as president and Dr. William C. Sandy, Harrisburg, Pa., was reelected secretary. The next annual meeting will be in Pittsburgh at a date in May or June 1937 to be fixed later.—Dr. Esmond R. Long, Philadelphia, was elected president of the National Tuberculosis Association at the annual meeting in New Orleans, April 23, and Dr. Charles J. Hatfield, Philadelphia, was reelected secretary. The next annual session will be held at Milwaukee, probably May 24-30, 1937.

**Meeting of Gastroenterologists.**—The first convention of the National Society for the Advancement of Gastro-Enterology and its New Jersey chapter, the New Jersey Gastroenterological Society, will be held in Haddon Hall, Atlantic City, June 5. The section on gastro-enterology of the Medical Society of New Jersey will meet June 4. Among speakers on both programs will be the following physicians:

- Louis L. Perkel, Jersey City, N. J., Gastric Polyposis.
- Gustave Buchy, New York, X Ray Demonstration of the Mucous Membrane of the Stomach and Duodenum.
- Elmer B. Freeman, Value of Endoscopic Examination in the Diagnosis of Gastro-Intestinal Lesions
- Emanuel Z. Epstein, New York, Cholesterol Metabolism and Liver Disorders.
- Martin E. Rehffuss, Philadelphia, Gallbladder Disease and the General Practitioner.

**Motor Accidents Increased in 1935.**—The total number of deaths caused by motor vehicles in 1935, as estimated by the National Safety Council, was 36,400, an increase of 1 per cent over 1934. In all, accidents caused about 99,000 deaths, 31,500 having occurred in homes, 16,500 being incident to occupations and 17,500 to other public activities. Two thirds of all traffic accidents in 1934 occurred in small towns and rural areas. Rural fatalities have increased 44 per cent since 1924, whereas deaths in cities have advanced but 27 per cent. More than 40 per cent of last year's victims were pedestrians. Home fatalities were 9 per cent less than in 1934, an outcome attributed to fewer deaths from excessive heat, most of which are classified as home accidents. Public accidents not involving a motor vehicle were the same as for 1934, drownings and firearms accidents accounting for a large proportion. In addition to deaths, there were 365,000 permanent disabilities and 9,100,000 temporary disabling injuries. The cost of accidents was estimated at \$3,400,000,000.

**Infant Mortality Higher in Rural Areas.**—Infant mortality was higher in 1934 in the rural areas than in the cities of the United States, the respective rates recorded being 62 and 58 deaths per thousand, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. Twenty-two states, however, showed higher rates in the cities than in the rural areas. In certain states the higher ratio of urban to rural mortality was considerable. These ratios ranged from 140 to 145 per cent in Tennessee, Arkansas and West Virginia. Among the twenty-one states in which higher infant mortality rates were reported in the rural areas, California reported a ratio of urban to rural mortality of only 71 per cent. In five states the rates were identical in the urban and rural areas. The rates

in the urban areas of the states as a whole have declined 7.9 per cent since 1930 while that in the rural areas has declined 6.1 per cent. The rural districts show declines in all but five states, according to the bulletin, whereas there were rises in the infant mortality in the urban population in eleven states.

**Medical Bills in Congress.**—*Changes in Status:* S. 5, the Copeland bill, has been reported to the House, with amendments, proposing to prevent the adulteration, misbranding, and false advertising of food, drugs, devices and cosmetics. The House Committee on Interstate and Foreign Commerce struck out all after the enacting clause of the bill as passed by the Senate and reported a substitute bill to the House. H. R. 9185 has been reported, with amendments, to the Senate, proposing to enact a "Liquor Tax Administration Act." This bill, among other things, proposes to amend existing law so as to authorize the obtaining of alcohol tax free "for the use of any clinic operated for charity and not for profit, including use in the compounding of bona fide medicines for treatment outside of such clinics of patients thereof, but not for sale." *Bills Introduced:* H. R. 12757, introduced (by request) by Representative Knutson, Minnesota, proposes to amend the Social Security Act so as to authorize federal aid to the states in furnishing financial assistance to disabled adult needy citizens. H. R. 12764, introduced by Representative Vinson, Kentucky, proposes to create in the Bureau of the Public Health Service a Division of Stream Pollution Control. H. R. 12793, introduced by Representative Norton, North Carolina, proposes to amend certain administrative provisions of the internal revenue laws. The bill, among other things, proposes to amend the Harrison Narcotic Act so as to provide that a person not registered as an importer, manufacturer, producer or compounder and lawfully entitled to obtain and use any of the narcotics covered by the act in a laboratory for the purpose of research, instruction or analysis shall pay a special tax of \$1 per annum and shall keep such special records as the Commissioner of Narcotics, with the approval of the Secretary of the Treasury, may by regulation require.

#### CANADA

**Dr. Archibald Awarded Trudeau Medal.**—Dr. Edward W. Archibald, for many years director of the surgical department, McGill University Faculty of Medicine, Montreal, has been awarded the Trudeau Medal of the National Tuberculosis Association. Dr. Archibald was made an honorary fellow of the Royal College of Physicians of London in 1927, the fourth Canadian to be thus honored.

**Dominion Medical Meeting.**—The annual meeting of the Canadian Medical Association will be held in Victoria, B. C., June 22-26. Speakers announced for the general sessions include:

Dr. Verne C. Hunt, Los Angeles, Curability of Cancer of the Stomach.  
Dr. James B. Collip, Montreal, Significance of Recent Investigations of the Ductless Glands.

Dr. Charles H. Best, Toronto, Methods of Administration of Hormones, with Special Reference to Protamine Insulin.  
Sir Frederick Banting, Toronto, Silicious Research.

Dr. John A. Gunn, Winnipeg, Surgery of the Sympathetic Nervous System.

Dr. Beverley C. Leech, Regina, Sask., The Present Trend in Anesthesia.

Dr. Alfred T. Barin, Montreal, Primary Tumor of Bone.

Dr. Edward W. Archibald, Montreal, will deliver the Lister Oration.

### Government Services

#### Advisory Board to Formulate Health Code

The establishment of an advisory board to formulate a standard public health code has been announced. Members of the advisory committee include:

W. Frank Walker, Dr. P.H., of the Commonwealth Fund, New York.  
Henry F. Vaughan, Dr. P.H., health commissioner of Detroit.

Dr. Hugh R. Leavell, health officer of Louisville.  
A. D. Weston, chief sanitary engineer, Massachusetts State Health Department, Boston.

H. A. Whittaker, chief sanitary engineer, Minnesota State Health Department.

Dr. James N. Baker, state health officer, Montgomery, Ala.

Dr. Earl G. Brown, state health officer, Topeka, Kan.

Dr. George C. Ruhland, health commissioner of the District of Columbia.

The first problem in this project sponsored by the Treasury Department will be for each city or community to bring its present health code into conformity with a tentative draft under five headings: organization, control of cases of communicable diseases, control of environment, birth morbidity and mortality reporting and the keeping of records, and education and publicity and the right of entry.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 11, 1936.

#### The Progress of Physical Medicine

Lord Horder presided at a luncheon in connection with the International Congress of Physical Medicine, to be held in London May 12 to 16. Thirty countries agreed to send representatives. Dr. Richard King Brown, editor of the *British Journal of Physical Medicine*, the principal guest, was presented with a wrist watch in recognition of his services to physical medicine. Lord Horder said that he had the privilege of being honorary president of the congress but unfortunately could not be present, as last August he accepted an invitation to attend the meeting of the American Medical Association in Kansas City. He welcomed the congress as calculated to stimulate interest in this growing branch of preventive and curative medicine. Only in recent years had the methods of physical therapy been brought under scientific control, which was essential. There now existed such a wealth of methods and instruments that one almost hoped that nothing further might be introduced for a while, so as to allow a breathing space for the trial under careful observation of methods already available. Meanwhile physical medicine went from strength to strength. Its achievements had been great; its potentialities were still greater. There were of course pitfalls. It could not be applied indiscriminately to all sorts of diseases. With the public's incorrigible faith in and childlike love for machinery, this temptation became very great. There was also the danger that the physical therapist might not keep closely in touch with the physicist on the one side and the clinician on the other. He should look for support and guidance to the pure physicist and to the pure clinician, taking his problems to them for discussion and criticism. There was the danger that he might wander away from the bed rock of pathology and lose himself in a sea of speculation, or, equally calamitous, construct a pathology of his own, which could not be other than pseudo-pathology. There was also the danger that he and his efforts might be commercialized by the business man.

#### The Treatment of Bone and Joint Tuberculosis

At a meeting of the Tuberculosis Association Sir Henry Gauvain, medical superintendent of the Cripple Hospitals at Alton and Hayling Island, read a paper on the treatment of bone and joint tuberculosis. His experience with the open air and climatic treatment at these hospitals is unique in this country, where he has been a pioneer. He emphasized the importance of remembering that a tuberculous osteitis or arthritis occurred in a tuberculous patient—in other words was secondary to a primary focus elsewhere. Children were often infected through the tonsils or septic teeth, the corresponding glands being involved. Removal of the tonsils and glands might eradicate the disease, but in the majority of cases the primary source of infection was never discovered and only after a more or less prolonged period did osteitis or arthritis supervene, as in tuberculosis of the hip joint. Even excision of the joint, an operation now happily required rarely did not cure the patient of tuberculosis. Tuberculous infection did not necessarily or even usually result in a severe local lesion. When it did, treatment must not concentrate solely on the local lesion but account should be taken that the patient is tuberculous.

Treatment logically followed two lines, general and local. Extirpation of the local lesion, at one time often the treatment of choice when practicable, has become less frequent. It was still of value in certain cases, such as tuberculous knee joint

in an adult, in which excision was frequently indicated, because the length of treatment was shortened, the danger of recurrence largely avoided and the resulting disability trifling, often less than under conservative treatment. Even in these cases it was wise to immobilize the infected limb under good conditions for, say, three months before operating. Excluding such limited types of cases calling for radical measures, conservative treatment was called for. Many years ago Gauvain defined conservative treatment of bones and joints as all measures which tend to improve the patient's health, increase his resistance and preserve or restore the part attacked. He would now somewhat modify the last. In certain cases it might be wise to fix the lesion by operative means, so that the affected part was immobilized and the risk of deformity or disability minimized.

#### PROGRESSIVE SPINAL CARIES IN CHILDREN

In progressive spinal caries in children, Gauvain unhesitatingly avoids bone grafting or fusing, as mechanical immobilization is almost invariably curative and the chances of dissemination of tuberculous meningitis are avoided. If deformity exists, it may often be reduced. But after the disease is arrested operation may be indicated. If the patient has poor dorsal musculature, is of the flabby type and cannot have his after-care satisfactorily supervised, there is danger that a little residual deformity may increase. In these cases Gauvain advocates a bone graft such as that performed by Albee and others. The osteosynthesis may not be sufficient to prevent increase of the deformity and should for some time be associated with a spinal jacket or brace. In borderline cases deformity may be avoided by instruction in back raising exercises. Absolute immobility during the later stages of recumbent treatment is not necessary or desirable.

#### SPINAL FIXATION IN ADULTS

Gauvain said that, while many surgeons would agree with him about osteosynthesis in children, they hold different views as to adults. The great argument is that it shortens treatment. It certainly does during the time the patient is being treated, but that is not the same as shortening the time during which treatment should be given. Gauvain holds that, if undertaken, it should be performed usually only after the disease is no longer advancing. The great defect of the operation is that it obscures evidence of progressive disease. In his experience as consulting surgeon to tuberculosis schemes, Gauvain is amazed at the number of cases of osteosynthesis which subsequently drift to institutions by reason of abscess or other complication following the treatment.

#### HIP AND KNEE DISEASE

In the majority of cases in which conservative treatment is adequate and after-care efficient, operation is not required. If deformity can be corrected, and it nearly always can, the patient is allowed up on crutches, wearing a celluloid splint, when the disease is arrested. The joint remains frequently fixed by fibrous ankylosis. Some patients get adduction deformity. If this cannot be corrected, a bifurcation or other osteotomy should generally be done, with perhaps arthrodesis as well.

In tuberculous disease of the knee in children Gauvain never operates; in adults he favors excision.

#### CLIMATIC TREATMENT

Gauvain considers that climatic and seasonal changes are valuable in treatment by producing varying stimuli. Having an inland and a marine hospital at his disposal, he is able to give his patients a change from one to the other. Sun bathing and light treatment he finds of particular value in multiple lesions in small children and sea bathing of great value in selected cases.

#### TYPE OF HOSPITAL ADVISED

Gauvain prefers the pavilion type of hospital to the type of several stories (usual on the European continent). He objects to wards open on one side, which may be cruel to both patients and staff. His open air wards have folding walls on the southern side, which may be completely opened or closed or intermediate. When closed there is still adequate ventilation. There is panel heating in the floor especially to prevent damp and condensation. If he had had his own way he would have had sliding roofs, which he has designed elsewhere with great satisfaction to those who use them.

#### Illicit Drug Traffic

The difficulties in applying the international conventions, by which the traffic in opium is controlled, were discussed at a meeting of the Central Opium Board of the League of Nations at Geneva. In drafting its report to the council of the league the board has drawn attention to the fact that more opium is grown in the world than can be legitimately consumed. The returns under the conventions show that the main object has been attained so far as legitimate trade is concerned. But with regard to illicit trade it has been found that success can be achieved only by the help of informers. The illicit import seizures of morphine in the United States during 1934 amounted to 24 Kg. and in Canada 2 Kg., together making nearly half the seizures of the world. But the American authorities admit that there are 120,000 drug addicts in the country, and Canada admits to 8,000, and these must have consumed the greater amount of the imports. As neither opium nor coca leaves are grown in either country, and the control of manufacture in both countries is very effective, it is inferred that the illicit traffic must be supplied by unauthorized factories abroad. The board concludes that clandestine factories producing many tons of drugs annually must exist somewhere, showing that the present system of fighting the drug traffic is not effectual.

#### PARIS

(From Our Regular Correspondent)

April 21, 1936.

#### Charlatanism in the Old and the New World

A constant reader of any reputable French newspaper will be astonished, if he is an American, to note the amount of advertising space filled by extravagant claims of charlatans of all sorts. One of the more recent forms of quack diagnosis and treatment, which fills column after column of text, is called "sympathicotherapy." It guarantees to diagnose and cure any form of ailment by pressure on the "sympathetic" nerve endings in the nasal septum. In the April 12 issue of the *Concours médical*, a recent decision of the criminal court of the department of the Seine, in which Paris is situated, is cited and the lesson from this judgment is commented on by one of the editors. A Dr. X, so-called specialist in "sympathicotherapy," was held, March 28, to be guilty of swindling and charlatanism on complaint of a resident in one of the rural districts, who had made an appointment by letter with Dr. X, having read of the latter's "marvelous" results. On arrival at the office the patient was informed that Dr. X was waiting for him. He was given the "nasal touch" treatment by an individual whom the patient assumed to be the famous sympathicotherapist, and on being informed that a series of ten treatments would cost 100 francs (about \$7) immediately paid in advance.

By chance, the patient learned that the real Dr. X was in Egypt, and on comparing the photograph of Dr. X with the physiognomy of the person who had treated him he recognized the substitution.

The evidence presented at the trial showed that Dr. X had established many branch centers of "sympathicotherapy" all over France, selling the local "rights" to exploit the treatment under his name to both unscrupulous practitioners and to some



persons who were not even physicians. Thus thousands of patients could be treated simultaneously. It was estimated that the sum of 50 million francs (over \$3,000,000) had been contributed to the treasury of "sympathicotherapists" during the past three years in France.

In discussing this case, Fischer, the editor, takes a bird's eye view of the subject as it exists in Europe and the Americas.

If publishers were inclined to be less greedy, charlatanism would not be a flourishing industry. It is only through extensive advertising that victims are attracted. In some countries there are publications which are devoted to or specialize, according to Fischer, in this form of publicity. In Germany there are over 150 "reviews" and in England the journal *Health for All* has a circulation of 24,000. The journal of the chiropractitioners is quoted as having had 100,000 subscribers in 1930.

In the July 1935 number of the Bureau of Hygiene of the *League of Nations Bulletin* it is stated that it is difficult to estimate the enormous sums received by charlatans. An instance is cited of a vender of "curative earth" who has a revenue in Germany of a million marks (\$300,000) annually. It is estimated that the 36,150 charlatans of all types in the United States have an annual revenue of \$125,000,000. In England, Flemming has stated that 40,000 hospital beds could be supported by the money received by charlatans.

Certain governments, especially Germany and the Swiss canton of Appenzell, grant charlatans the right to exercise their cult, according to Fischer. In 1930 the ratio of charlatans to licensed practitioners in Germany was 27 to 100. The former, however, cannot be employed in social insurance work in either England or Germany. The majority of charlatans have not pursued any studies beyond those of the grammar school grades. How can the success of charlatans be explained? One can cite diagnosis of diseases that are nonexistent, apparent cures of genuine ailments, spontaneous cures and imaginary maladies. Do not charlatans benefit from the belief in magic, which is firmly rooted in the average person? Do not the charlatans seek to impress the imagination of the sick by a theatrical attitude and by the use of methods that will impress the patient? Often the absolute guaranty of cure by the charlatan has more influence than the honest reserves as to cure expressed by the medical man.

In Germany one encounters not only the lower but chiefly people from the well educated and richer groups of society in the waiting rooms of charlatans; hence, in spite of indictments and even prison terms, the quack always finds some one to defend his methods.

#### Nonprotein Nitrogen Retention Following Operations

French surgeons have been interested in nonprotein nitrogen retention as a postoperative complication for five years. At the Nov. 22, 1935, meeting of the *Société médicale des hôpitaux*, Duval and Roux read a paper in which they stated that a high blood urea is regarded as unfavorable. This, according to the surgeon Duval and to Roux, an internist, is a mistake, so that a high blood urea really makes the prognosis more favorable. Such a condition is due to the entrance into the blood stream of polypeptides that are toxic products of the traumatic devitalization of the tissues around the operative field. This form of nitrogen retention in patients with normal kidneys must be distinguished from that which is the result of damaged kidneys. Their observations on the urea and polypeptide content of the blood serum combined with the determination of the urea content of the urine led Duval and Roux to affirm that in patients who have normal kidneys a postoperative increase in urea in the blood does not necessarily make the prognosis unfavorable. The prognosis depends on the relative modifications of the nitrogen and polypeptide retention as follows: 1. An increasing degree of nitrogen and polypeptide retention are unfavorable only if the latter rises continuously. 2. A normal blood urea

when associated with a rapidly increasing polypeptide retention gives an unfavorable prognosis. 3. A marked and rapidly rising blood urea when it is accompanied by a normal or only transiently elevated polypeptide retention gives a favorable prognosis. In this third group the increased blood urea is the result of an excessive production of urea by the liver at the expense of the polypeptides that accumulate in the blood as the effect of the operation. This urea elaboration by the liver is a sort of compensatory effort and represents the ability of the liver to transform into urea, which is nontoxic, the toxic polypeptides.

In the discussion, Rathery confirmed the view that a postoperative high blood urea in patients with normal kidneys was due to a transitory excessive activity of the liver. The relation of the polypeptides and urea is of primary importance. Labbé also believed that it was a mistake to base the prognosis after operation solely on the blood urea. Brulé stated that in typhoid one finds a high blood urea without serious kidney lesions. Similarly, a high postoperative blood urea bears no relation to such a retention in cases of nephritis.

#### Variations in Tuberculin Reactions in the Army

At the March 3, 1936, meeting of the Académie de Médecine, observations on 2,155 tuberculin skin reactions were made by Benedetti and other medical officers. There were 731, or 33.95 per cent, negative reactions. There was some difference according to whether the recruits were raised in a rural or in a city environment. Of 1,529 of city origin, 390, or 25.5 per cent, and 340, or 54.25 per cent, of 626 of rural origin did not react to tuberculin. Of the total of 2,155 skin tests, 1,219 were done in a regiment stationed at Paris whose soldiers were chiefly of Parisian origin. There were 41.9 per cent negative reactions among these 1,219 city recruits. In a regiment from Northern France 936 tests were made with 23.5 per cent negative results. Attention was called to the fact that the percentage of negative tests varies according to the region from which the recruits come.

#### BERLIN

(From Our Regular Correspondent)

April 8, 1936.

#### New Regulations for Jewish Physicians

The national führer of medicine, Dr. Wagner, has just issued regulations, based on the Nuremberg law of Sept. 15, 1935, with regard to the Jewish physicians in Germany. This law does away with the designations "Aryan" and "non-Aryan" and deals with the Jewish question in unequivocal terms. The distinction in the future shall be between Jewish and non-Jewish physicians. The following are classed as Jewish physicians: (1) full Jews (persons having four Jewish grandparents), (2) three-quarters Jews (having three Jewish grandparents), (3) half Jews (persons having two Jewish grandparents) who as of Sept. 16, 1935, were members of the Jewish religious community or who have at any subsequent time assumed such membership; in addition, half Jews, who as of Sept. 16, 1935, were possessed of Jewish marriage partners or who at any subsequent time have contracted marriages with Jews. All physicians not coming under these classifications are collectively designated "non-Jewish"; these include Jewish hybrids (mischlingen: quarter and half Jews) and non-Jewish physicians who are married to Jews.

It is further stipulated that no non-Jewish physician shall permit a Jewish physician to act as his locum tenens. A Jewish physician must substitute only for another Jewish physician. For those doctors who remain in the insurance practice, individual exceptions may be made when it is a question of maintaining adequate medical care for the people. Similar provisions govern the employment of assistants. Non-Jewish physicians must refer their patients only to non-Jewish special-

ists, hospitals, sanatoriums and so on, and vice versa. The non-Jewish doctors, particularly if members of hospital staffs, shall accept assignments from Jewish physicians when professional circumstances appear to permit; this especially applies to sick insurance patients referred by Jewish insurance physicians (since medical service for the insured must not be hampered). For consultations, that is, the calling in of a second physician, the same regulations apply. The registers of non-Aryan physicians formerly maintained are now supplanted by lists of those doctors who fall under the designation of Jewish (as defined). Physicians having Jewish marriage partners are known as "jüdisch versippte" (having Jewish kin). This group together with Jewish hybrids (mischlingen: that is, 50 per cent Jewish) are not included in these lists. The registers are assigned only for professional use.

New regulations with regard to the licensing of physicians are contained in the new physicians' law (THE JOURNAL, February 15, p. 551). Relevant in this connection is the statement of the national führer of medicine that no Jew or Jewish hybrid shall be granted a license to practice in the near future, and the same applies to any German who is married to a Jewess or a Jewish hybrid. As to the license for the sick insurance practice, the old rules remain in force whereby one non-Aryan pair of grandparents is sufficient grounds for denial (THE JOURNAL, Aug. 18, 1934, p. 501); those "having Jewish hybrid kindred" shall likewise be denied admission to the insurance practice.

With regard to operations on sick insurance members, it is stipulated that in the Berlin area only the clinical services of "physicians of German extraction in German private clinics" shall be underwritten. A few weeks after these regulations were made known, the president of the Berlin League of German Physicians offered a frank explanation of the latter rather obscure clause. "It would be," he said, "naturally unthinkable that German doctors should refer their patients to Jewish clinics. I urgently beg of you to observe this provision and I am certain that this suggestion will suffice to forestall any unpleasant consequences."

After April 1, Jewish physicians can no longer visit patients or administer treatment in the private clinics. Thus the previous restrictions that applied to practice in the governmental and municipal hospitals are extended to private institutions. In Berlin there are sixty-five "Aryan" and ten "non-Aryan" private clinics. Heretofore "Aryan" patients were not forbidden to enter "non-Aryan" private clinics. It was considered that such a prohibition might keep the patient from remaining under the care of his personal physician.

By enforcement of the Nuremberg law the Jewish (full) university professors, as far as they are officials, are retired from service with a pension. The rest of the Jewish hochschulen teachers, that is, honorary professors, assistant professors and unsalaried lecturers including those who took part in the World War and even those who were severely wounded, now are informed that the license to teach, the so-called *venia legendi*, has been taken from them.

#### Follow-Up Study of Young Diabetic Patients

Dr. Stockinger has reported a follow-up study of young diabetic patients treated at the medical clinic of the University of Kiel during the last fifteen years. Of thirty-one patients treated for diabetes in the period from 1921 to 1923, but one could be established as still living. Reports on 106 other patients treated subsequent to 1923 are presented. Of this number fifty-one (48.1 per cent) are living, while fifty-five (51.9 per cent) have died despite treatment with insulin. All but two of the survivors adhered strictly to the dietary and insulin regimen as prescribed for them at the clinic. The requisite daily dosage of insulin varied between 20 and 80 units, the average being 60 units.

Of thirty-nine patients dying outside the clinic, thirty-one had manifestly failed to maintain a satisfactory regimen; the records of only eight of this number testified to exemplary behavior, and five of the eight died of complications. Of sixteen fatalities within the clinic, eight were due to complications. In at least eighteen of fifty-five fatal cases, inefficacy of the insulin therapy, as shown by recurrence of coma, could be attributed to infections. The decisive factor was pulmonary tuberculosis in nine of the fatal cases, acute infections in five and appendicitis in three. In one case heredosyphilis was the contributing complication. The young diabetic patient's expectation of life is largely determined by social status and the cultural level of his family. In 75 per cent of all the fatal cases the patients came originally from the country and in 64 per cent they came from impoverished surroundings. The patient's intelligence and the realization of his condition together with self discipline were of major importance. From an examination of the scholastic and professional records of the survivors the impression was gained that youthful diabetic patients rise above the average both morally and intellectually. Dr. Stockinger attributes this superiority to the rigorous natural selection by which the unintelligent are early eliminated. It was also ascertained from observation that school work exercised a deleterious effect on the children.

#### Vital Statistics

Following the marked increase in marriages and the number of births in Germany during 1933 and 1934, a reaction set in toward 1935 which in recent months has become increasingly sharp. In fifty-five large German cities (of 100,000 or more inhabitants), the only communities for which complete figures are available, some 215,000 marriages were contracted during 1935 as against some 252,000 in 1934, a decrease of around 14 per cent. The decline has tended to accelerate in the last few months; in December 1935 only some 18,000 marriages were contracted, about 22 per cent fewer, as compared with some 23,000 in December 1934. The decline in the birth rate is not yet so evident.

The mortality of the same urban population has shown an increase, 244,000 deaths in 1935 against 207,000 in 1934. Nevertheless the excess of births for the year 1935 is still greater than for 1934, although the number tended to decrease toward the close of the year.

Official morbidity and mortality statistics compiled by the police are available for the entire reich. In 1935 132,930 cases of diphtheria were recorded, 111,648 cases of scarlet fever, 1,328 cases of epidemic cerebrospinal meningitis and 2,080 cases of anterior epidemic poliomyelitis. All these diseases were more prevalent than in 1934. Of 60,368 cases of pulmonary tuberculosis reported, 32,587 proved fatal. Of the approximate 244,000 deaths in the fifty-five large cities, 14,577 resulted from tuberculosis, 16,196 from pneumonia and 11,429 from senile infirmities; there were also 6,007 suicides, 215 homicides and 6,052 accident fatalities.

#### Regulations for the Leasing of Pharmacies

\* According to a new order, all pharmacies independently engaged in meeting the demand for medicaments, that is, practically all excepting the hospital pharmacies, are to be classed as "public apothecaries' shops." No Jew may hereafter be a lessee of such an establishment, and if the owner of the pharmacy is a Jew he must rent it to a non-Jew. The orderly dispensing of drugs is considered jeopardized if an exorbitant rental is asked, if the landlord seeks for his own security to impose harsh terms on the lessee or if the lessee is under onerous obligations to a third party. The district leadership of the National Socialist party shall pass on the political reliability of the lessee. No person shall be considered eligible to operate a public pharmacy who has not been active as a pharma-

cist in Germany for at least three years subsequent to receiving his license. For pharmacists in cities of more than 50,000 inhabitants this prerequisite is set at ten years if in addition to the proprietor at least one other registered pharmacist is employed in the store.

### ITALY

(From Our Regular Correspondent)

March 31, 1936.

#### Antityphoid Vaccination for Soldiers

The Associazione nazionale per l'igiene recently held an extraordinary session at the Scuola di sanità militare of Florence. Lieutenant Colonel Nicola Bruni, honorary professor of military hygiene in the school, reviewed the epidemiology of typhoid among soldiers. His data were compiled from statistics from several countries. The higher frequency of typhoid among soldiers, in comparison to civilians, depends on the age and living conditions of soldiers. The speaker stated, from the review of statistical data, that the efficacy of antityphoid vaccines is obvious. Discussion at present is concerned with the quality of the vaccine and with the technic of administration. Different vaccines are used by the armies of different countries. They are administered by either the parenteral or the oral route (vaccines in tablets). Vaccines with formaldehyde, the local and general reactions of which are insignificant, are used by the Italian army. He said that Castellani emphasized the importance of the use of polybacterial vaccines by associating antityphoid and anticholeric bacteria in the vaccine. He favors the preparation of tetrabacterial vaccine for workers and troops in East Africa. The bacteria for preparation of the vaccines should be carefully selected. The problem is important because recently performed research work seems to prove that the action of bacteria depends on the stage of its development. The speaker concluded that antityphoid vaccines are efficient against typhoid, provided the bacteria used in their preparation is well selected and the vaccination is repeated as it is necessary.

#### Meeting of Antituberculosis Society

The Federazione per la lotta contro la tubercolosi met in Palermo under the chairmanship of Professor Manfredi. Professor Luna of the University of Palermo spoke on the anatomy of pulmonary interlobar fissures. The pulmonary lobes may be perfectly cut off from one to the other by a deep fissure which begins and ends at different points of the hilus. In incomplete separation of the lobes, the fissures do not start at the hilus but in the pulmonary substance. The variations in the fissure of the right lung are more frequent than those in the left lung.

Dr. Fici spoke on late results of bilateral artificial pneumothorax. A patient who was treated for two years and considered as clinically cured died from an intercurrent non-tuberculous disease three years after discontinuation of collapse therapy. Necropsy proved that a clinical cure had taken place during the life of the patient. The speaker's case is the first one with this verification.

Dr. Gualdi spoke on the relation between gastric and pulmonary tuberculosis. He concluded from his observations that the normal stomach can stand the attack of tubercle bacilli without developing tuberculosis, but after a process of gastritis the secretory and motor functions of the organ are disturbed, the defenses of the gastric mucosa are diminished and the organ becomes a favorable terrain for the implantation of tubercle bacilli.

Dr. Bruno of Syracuse spoke on the pathogenesis of pleuritis during bilateral pneumothorax. The speaker found, in a large number of patients who had monolateral dry pneumothorax, that the establishment of a second contralateral pneumothorax is followed by the development of pleuritis in the side first

treated. The pleural exudate frequently disappears in a short time. The speaker discussed the pathogenesis of this form of pleuritis. He believes that the second collapsing treatment acts on the lung as a mechanical and allergic stimulation by which the equilibrium of organic defenses is disturbed. This results in a temporary activation of the pleural specific foci, which before the treatment were at rest.

### VIENNA

(From Our Regular Correspondent)

March 30, 1936.

#### Sickness Insurance in Austria

The following figures are taken from a social insurance report for 1935, which has just been published: Sick insurance societies to the number of sixty-three and having a membership of 1,620,000 were in existence as of 1935. Gross income amounted to 82,700,000 Austrian schillings (nearly \$17,000,000); expenditures totaled 83,900,000 schillings, so that there was a deficit in excess of 1,000,000 schillings (\$200,000). Disbursements are itemized as follows: sick indemnities, 23,000,000 schillings; physicians' honoraria, 15,000,000 schillings; hospital care, 9,000,000 schillings; medicaments, 5,000,000 schillings; dental treatment, 3,000,000 schillings; special treatment (physical therapy, roentgen therapy and so on), also 3,000,000 schillings; obstetric care, 2,000,000 schillings. At the close of 1935, 307,000 persons belonged to the workers' sick insurance societies, 600,000 persons, including many in industry, trade and commerce, were members of the private insurance societies and around 400,000 belonged to the governmental, railway and municipal insurance societies. The remaining insured persons were in independent callings and private corporations.

#### Injuries to Kidneys by Trauma

Before the Vienna Society of Physicians, Dr. Deuticke of the First Surgical Clinic discussed injuries to the kidneys by blunt objects or trauma. Such injuries are so rare that of 140,000 outpatients and 13,500 hospitalized patients received at the accident station in twenty years only seventy-nine cases came under observation. It is not always possible to distinguish immediately between a slight and a serious injury. In cases of incipient hemorrhage or intraperitoneal secondary injury, operation is indicated. In operations performed within the first twenty-four hours the transperitoneal approach would seem to be more favorable; in operations performed at a later time the lumbar approach is indicated. The more conservative procedure has won many adherents. Of the seventy-nine patients mentioned, only four were nephrectomized. The total mortality of the injured was 14 per cent. The after effects may be divided into three groups: (1) those caused directly by trauma, such as hydronephrosis from flexion or contraction of the kidney pelvis and from ureteral dysfunction; (2) effects indirectly imputable to the trauma and dependent on the constitution of the patient (tuberculosis and hypernephromas might result, but such cases are extremely rare), and (3) post-traumatic lithiasis and nephritis partly made possible by the trauma. The question of nephritis is still unanswered. It may be said that protracted excretion by the injured kidney of albumin and even of blood and cylindric casts can be regarded as practically without significance. Such excretion frequently results merely from local venous congestion. Damage to the sound kidney from serious injury to the other kidney is quite possible. Serious destruction of tissue accompanied by marked resorption of products from the splitting up of albumin often causes damage to the uriniferous tubules and brings on manifestations of nephritic disorders, which disappear, however, as the resorption of albumin ceases. So far as is known at present this condition results in no permanent injury. Whether or not a diffuse bilateral glomerulonephritis

can appear as a post-traumatic complication has not yet been reliably ascertained. However, a causal relationship between trauma and chronic nephritis should probably be assumed. After operative removal of a kidney subsequent to a trauma, complete function may be assumed by the remaining kidney, provided the latter organ is normal.

In three of thirty-four cases listed by the author in which follow-up examinations were made, complete destruction of the kidney due to after effects was observed. One of the three patients died of bilateral renal calculus; the other two presented, respectively, hydronephrosis due to scarry occlusion of the ureter and complete loss of function following primary operative tamponade. In all three cases severe hemorrhages occurred. These cases show, according to the author, how important an indication early nephrectomy may be under similar conditions. Conservative treatment involves the danger of chronic hemorrhage or infection, and the advantages to be obtained from such treatment are dubious. Acquaintance with the possible after effects of kidney injuries inflicted by dull force is of the utmost importance forensically in the adjudication of personal injury suits. Lithiasis such as might prove dangerous to life should be regarded as the most significant possibility.

#### Regulation of Blood Donors

In Vienna the employment of blood donors has been organized into a unified system with a central headquarters. A dozen or more donors are always on call at this center and may be sent to any point in the city at a moment's notice. The shift on duty in the call room is changed every twenty-four hours. In order that the supply of donors may suffice for public needs and that no single donor may be subjected to excessive demands, the following regulations have been issued by the Vienna Board of Health: Only those persons are accepted for blood transfusions who possess new blood donor identification cards issued by a magistrate. This card carries a photograph of the donor and sets forth his blood type, his number, and the amount of blood previously donated, with the date. In addition the card must show the date of the donor's last blood examination and the results of such examination. A list of professional blood donors possessing such identification is distributed among the hospitals of Vienna. This is kept down to date. After a successful transfusion an entry is made on the donor's card which, together with a memorandum, is sent in to the management of the Vienna General Hospital. This is in every case to be done by the operating surgeon or the institution and not by the donor himself. After a suitable interval the authorities of the General Hospital request that the donor undergo a hematologic examination. Only after this test has taken place will the donor's card be returned to him. In this way the donor is prevented from contributing his blood anew before a suitable regeneration has taken place. Remuneration for the donor's services is based on the economic circumstances of the donee. In cases involving hospital patients, the donor receives a minimum fee of 50 schillings for each transfusion; if the donee is a private patient the fee ranges from four to five times that amount.

#### Marriages

RAYMOND N. ALLEN, East Orange, N. J., to Miss Noeline Adele Davis of Orange, April 18.

ORLEN J. JOHNSON, Marshall, Mich., to Miss Audrey Merritt Locke of Detroit, March 29.

ELAN C. TOONE JR., Richmond, Va., to Miss Adelaide Salter of Anniston, Ala., April 11.

JOHN B. HAEERLIN JR., Chicago, to Miss Clare Rogerson of Montreal, Que., Canada.

EDWIN R. ANDERSON, Warren, Pa., to Miss Harriet Schindler in February.

#### Deaths

Michael Joseph Gallogly, Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1908; member of the State Medical Society of Wisconsin; formerly instructor in obstetrics, assistant professor of obstetrics and associate clinical professor of obstetrics and gynecology, Marquette University School of Medicine; aged 54; died, February 13, of cerebral hemorrhage.

Henry S. Gully, Meridian, Miss.; Louisville (Ky.) Medical College, 1885; member of the Mississippi State Medical Association; formerly professor of operative and traumatic surgery and clinical surgery, Mississippi Medical College; at one time medical superintendent of the Matty Hersee Hospital; aged 76; died in February of pneumonia.

Elias Wilbur Reed ♂ Holton, Kan.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; past president of the Jackson County Medical Society; for many years county health officer; formerly mayor, and member of the school board; aged 66; died, February 25, in the Christ's Hospital, Topeka, of pneumonia.

Arthur Jay Warren, Mount Clemens, Mich., Detroit College of Medicine, 1893; member of the Michigan State Medical Society; formerly secretary of the Macomb County Medical Society; served during the World War; aged 66; on the staff of St. Joseph's Hospital and Sanitarium, where he died, February 28, of carcinoma.

Stephen H. McDonald, St. John, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1903; past president of the New Brunswick Medical Society; formerly registrar and secretary of the Provincial Council of Physicians and Surgeons of New Brunswick; aged 57; died, February 4, of coronary thrombosis.

Francis Allen Wells, Lincoln, Neb.; Medical Department of Omaha University, 1901; served during the World War; aged 59; died, February 5, in the Bryan Memorial Hospital, of embolism of pulmonary artery and fracture of the left tibia, as the result of being struck by an automobile several weeks previously.

Virgil Henry Barton ♂ McAlester, Okla.; University of Nashville (Tenn.) Medical Department, 1900; past president of the Pittsburg County Medical Society; served during the World War; physician to the Oklahoma State Prison; aged 58; died, February 11, as a result of coronary thrombosis.

Walter Jay Richardson, Fairmont, Minn.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1885; an Affiliate Fellow of the American Medical Association; aged 79; died, February 20, of spinal cord injuries following fracture of the spine eight months previously.

James Stanislaus Walton ♂ Amsterdam, N. Y.; Niagara University Medical Department, Buffalo, 1896; district state health officer; at one time health officer of Amsterdam; formerly on the staff of the Montgomery Sanatorium; aged 66; died, February 18, of coronary thrombosis.

Clarence Edward Strite ♂ Surg., Lieut. Commander, U. S. Navy, retired, San Diego, Calif.; Baltimore Medical College, 1902; entered the Navy in 1904 and retired in 1918 for incapacity resulting from an incident of service; aged 58; died, February 28, of arteriosclerosis and heart disease.

Hubert Daniel Brennan, Bristol, Conn.; University of Vermont College of Medicine, Burlington, 1892; member of the Connecticut State Medical Society; on the staff of the Bristol Hospital; aged 71; died, February 27, of hypernephroma of the kidney.

Frank Richard Herriman, New York; Long Island College Hospital, Brooklyn, 1902; formerly assistant professor of otolaryngology, New York Post-Graduate Medical School of Columbia University; served during the World War; aged 58; died, April 4.

Alexander Frank Thompson ♂ Troy, N. C.; Medical College of Indiana, Indianapolis, 1895; past president of the Montgomery County Medical Society; aged 65; died, February 16, in a hospital at Charlotte, of injuries received in an automobile accident.

Charles Francis Talley ♂ Powell, Ohio; Miami Medical College, Cincinnati, 1886; for four years a member of the state legislature; past president of the county board of health; aged 71; died, February 8, of myelogenous leukemia and diabetes mellitus.

**Julia Kimball Qua**, Galesburg, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; formerly on the staffs of the City and St. Mary's hospitals, Amsterdam, N. Y.; aged 73; died, February 1, of cerebral arteriosclerosis.

**George C. Wagner**, Tacoma, Wash.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1881; member of the Washington State Medical Association; aged 76; died, February 25, of carotid aneurysm, cerebral emboli and partial hemiplegia.

**Carl Anton Schau Gundersen**, Madison, Wis.; Bennett Medical College, Chicago, 1912; member of the State Medical Society of Wisconsin; served during the World War; aged 55; died, February 19, of bronchopneumonia and malignant hypertension.

**George Ward Rockwell**, Akron, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1912; member of the Ohio State Medical Association; aged 58; died, February 25, of uremia, arteriosclerosis and perforation of the ileum.

**Andre Leopold Stapler** @ Chicago; Chicago College of Medicine and Surgery, 1912; at one time assistant in surgery at his alma mater; on the staffs of the Augustana and Grant hospitals; aged 53; died, February 6, of coronary thrombosis.

**Charles A. Prevost** @ St. Johnsbury, Vt.; Victoria University Medical Department, Coburg, Ont., 1891; on the staff of the Brightlook Hospital; aged 73; died, February 26, in Rockaway, N. J., of chronic myocarditis and pneumonia.

**Charles F. Green**, Detroit; Howard University College of Medicine, Washington, D. C., 1904; aged 55; on the courtesy staff of St. Joseph's Mercy Hospital, where he died, February 26, of acute dilatation of the heart and influenza.

**Frank F. Petty**, Lawrenceville, Ill.; Hospital College of Medicine, Louisville, Ky., 1902; member of the Illinois State Medical Society; aged 64; died, February 19, in the Good Samaritan Hospital, Vincennes, Ind., of pneumonia.

**Benjamin Franklin Wentworth**, Scarborough, Maine; Medical School of Maine, Portland, 1897; for many years superintendent of schools in Scarborough, and health officer; aged 64; died, February 20, of arteriosclerosis and bronchopneumonia.

**Leslie George Taylor**, Hudson, N. Y.; Baltimore Medical College, 1895; member of the Medical Society of the State of New York; served during the World War; aged 61; died, February 27, of arteriosclerotic heart disease.

**Albert Gus Shauck**, Arlington, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the Indiana State Medical Association; formerly county coroner; aged 57; died, February 24, of carcinoma of the stomach.

**Willcox Ruffin** @ Norfolk, Va.; University of Virginia Department of Medicine, Charlottesville, 1926; aged 35; on the staff of the Norfolk Protestant Hospital, where he died, February 28, of an accidental gunshot wound.

**James Joseph Loughran**, Brooklyn; Jefferson Medical College of Philadelphia, 1909; since 1926 associated with the psychiatric division of the Department of Hospitals; aged 51; died, February 11, of coronary sclerosis.

**James Wallace Skinner**, Genoa, N. Y. (licensed in New York in 1878); member of the Medical Society of the State of New York; aged 82; died, February 25, of cerebral arteriosclerosis and acute glomerular nephritis.

**William E. Talbott**, Harrisville, W. Va.; College of Physicians and Surgeons, Baltimore, 1880; aged 77; died, February 3, in St. Joseph's Hospital, Parkersburg, of complications due to a fractured hip received in a fall.

**Frederick Willard Rogers**, Alma, Mich.; Chicago Medical College, 1886; member of the Michigan State Medical Society; aged 75; died, February 19, in the Michigan Masonic Home and Hospital, of heart disease.

**Joseph Francis Quin**, Milwaukee; Milwaukee Medical College, 1905; aged 68; died, February 21, in the Milwaukee County Hospital, Wauwatosa, of portal cirrhosis of the liver, diabetes mellitus and arteriosclerosis.

**Morris C. Tuholske** @ Akron, Ohio; Washington University School of Medicine, St. Louis, 1903; school physician; member of the staff of the People's Hospital; aged 57; died, February 26, of myocarditis.

**Henry Otto Feiss** @ Cleveland; Harvard University Medical School, Boston, 1902; served during the World War; aged 59; died, February 20, in the Mount Sinai Hospital, of acute furunculosis and pneumonia.

**Peter Eckel Walker**, Gallatin, Tenn.; Bellevue Hospital Medical College, New York, 1871; Civil War veteran; aged 92; died, February 28, in the City View Sanitarium, Nashville, of bronchopneumonia.

**William Lowell Thurman**, Chicago; Meharry Medical College, Nashville, Tenn., 1920; aged 53; died, February 14, in the Provident Hospital, of acute suppurative sinusitis and cervical cellulitis.

**Arthur Warren Selleck**, Roscoe, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1913; health officer and school physician; aged 50; died, February 21, of pneumonia.

**Thomas Wister Edmunds**, Danville, Va.; College of Physicians and Surgeons, Baltimore, 1907; aged 50; died, February 1, in the Morton F. Plant Hospital, Clearwater, Fla., of pneumonia.

**Edward Stephen Hayes**, Portland, Ore.; Harvard University Medical School, Boston, 1881; for many years a member of the Wisconsin State Board of Health; aged 79; died, February 11.

**James Edward Thompson**, Miami Beach, Fla.; Long Island College Hospital, Brooklyn, 1897; served during the Spanish-American and World wars; aged 61; died, February 1, of heart disease.

**Frederic Chester Curtis**, Cleveland; University of Pennsylvania Department of Medicine, Philadelphia, 1899; aged 63; died, February 7, in St. Luke's Hospital, of cerebral hemorrhage.

**Ralph L. Gordon**, Lawrenceville, Ill.; St. Louis College of Physicians and Surgeons, 1900; member of the Illinois State Medical Society; aged 59; died, March 6, of chronic nephritis.

**Wells M. Osborn**, Indianapolis; Chicago Homeopathic Medical College, 1899; aged 61; died, February 4, in the Methodist Episcopal Hospital, of cardiovascular renal disease.

**Alvis Taylor Marshall**, Wyatt, Mo.; St. Louis University School of Medicine, 1903; aged 56; died, February 6, in St. Mary's Hospital, Cairo, Ill., of cirrhosis of the liver.

**James Arthur Lindsay**, Cairo, Ga.; Chattanooga (Tenn.) Medical College, 1899; formerly councilman and mayor; aged 63; died suddenly, February 8, of heart disease.

**Edwin Cyril Gillespie** @ Lambert, Miss.; Memphis (Tenn.) Hospital Medical College, 1912; served during the World War; aged 45; died, February 22, of pneumonia.

**Osmon Franklin Way**, Claremont, Minn.; Kentucky School of Medicine, Louisville, 1891; aged 77; died, February 21, of cerebral hemorrhage and arteriosclerosis.

**Milton Herbert E. Reynolds**, Ottawa, Ont., Canada; Queen's University Faculty of Medicine, 1905; aged 54; died, February 12, of influenza and pneumonia.

**John Percy Ogden**, Grand View, N. Y.; Trinity Medical College, Toronto, Ont., Canada, 1888; aged 80; died, February 10, of chronic myocarditis and bronchitis.

**Frank F. Whetzel**, Chicago; Indiana Medical College, Indianapolis, 1878; aged 77; died, February 13, of coronary thrombosis and cirrhosis of the liver.

**William M. Thomas**, Edgar, Neb.; University Medical College of Kansas City, 1897; aged 66; died, February 6, of angina pectoris and arteriosclerosis.

**Major Henry Langs**, Hamilton, Ont., Canada; University of Toronto Faculty of Medicine, 1903; aged 66; died, February 29, of carcinoma of the pylorus.

**James Cabell Minor**, Lakewood, Ohio; University of Virginia Department of Medicine, Charlottesville, 1882; aged 77; died in February, of pneumonia.

**Charles Shewell Abbott**, Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1892; aged 64; died, February 19, of angina pectoris.

**Edward Frazer Herndon**, Kansas City, Mo.; College of Physicians and Surgeons of Kansas City, 1876; aged 85; died, February 22, of pneumonia.

**James Herbert McNamara**, Gillett, Wis.; Marquette University School of Medicine, Milwaukee, 1933; aged 32; died, February 21, of pneumonia.

**Walter G. Day**, Feesburg, Ohio; Eclectic Medical Institute, Cincinnati, 1892; aged 67; died, February 28, of gastric carcinoma.

**John W. McCready**, Augusta, Mont.; Detroit College of Medicine, 1898; aged 71; died, February 17, of angina pectoris.

**Benjamin Apple**, San Francisco; Cooper Medical College, San Francisco, 1893; aged 64; died, February 1.

## Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

### FORMULA FOR SKIN PEEL

To the Editor:—Will you kindly give me the formula of a good skin peel. Please omit name.

M.D., New York.

ANSWER.—There is no perfectly satisfactory and absolutely harmless method of causing the skin to peel. Any method may cause too great a reaction with uncomfortable inflammation and slow recovery, and at times some cause increased pigmentation as an after-effect. For small areas carbon dioxide snow is one of the most accurately controllable methods; a few seconds' pressure will cause the formation of bullae. It has the disadvantage of making a sharply defined mark and, if too vigorously used, a scar. In babies and old persons it must be used with great caution.

Painting a small area with lactic acid, from 5 to 20 per cent in water, once a day for several days will cause an inflammatory reaction followed by exfoliation. The use of ultraviolet rays is one of the controllable methods of causing exfoliation. The sensitivity of the skin must be known and the lamp warmed up a definite time before exposure in order to get the proper reaction. The great drawback to this and other methods is the resultant tanning or freckling, and if peeling is employed to remove pigment this is evidently unpractical.

For removal of pigment, mercury solutions are commonly used. The bichloride is used most frequently. The following is a formula of Dr. White given by O. S. Ormsby (*Diseases of the Skin*, ed. 4, Philadelphia, Lea and Febiger, 1934, p. 592):

	Gm. or Cc.
Mercury bichloride .....	0.4
Diluted hydrochloric acid.....	4.0
Glycerin .....	30.0
Alcohol .....	60.0
Rose water .....	60.0
Distilled water .....	120.0

This is to be dabbed on and allowed to dry at night and washed off in the morning. Any such application should be first tried on a small area to gauge its effect on the skin to be treated, for there is a great variation in the way different skins react. There should of course be a poison label on the bottle. If the test application causes a prompt inflammatory reaction, the formula is too strong and is apt to be followed by pigmentation. The effect desired is a mild inflammation coming on after a week or more.

The following is a nonmercurial preparation also suggested by White:

	Gm. or Cc.
Ammonium chloride .....	2.0
Cologne water .....	30.0
Distilled water .....	240.0

This should be tested in the same way, for some skins become pigmented after an inflammatory reaction caused by the oil of bergamot in a certain kind of cologne water. Another perfume may be used in its place.

For the rapid removal of lesions of acne vulgaris, peeling pastes are used. One of the best is the following: (from Kren, O., *Kosmetische Winke*, Berlin and Vienna, Julius Springer, 1930, p. 25):

	Gm. or Cc.
Beta-naphthol .....	10.0
Flowers of sulfur.....	40.0
Green soap .....	25.0
Liquid petrolatum .....	25.0

This will darken to brown because of the oxidation of the beta-naphthol, but that does not interfere with its action. Only those with intact kidneys should be subjected to this treatment, for there may be absorption. Also it must not be applied to the whole face at once but to the cheeks and chin at one time and to the forehead and nose at another, to avoid a toxic reaction.

The skin should be cleansed with benzene or ether and then the paste is spread in a thick layer over the affected part. The clothing must be protected to avoid spotting. At first there is a burning sensation, which passes off soon. At the end of twenty or thirty minutes the paste is removed. The skin is red, but in a few hours it resumes its normal color. The application should be repeated every twelve hours or twenty-four hours until there remains a tightness of the skin or beginning exfoliation. The skin must not be washed with soap and water

at this time but may be gently cleansed with 0.5 salicylic acid in alcohol. After the treatment ceases, the salicylic alcohol should be continued, followed by powder. If the treatment has been kept up five days, at least three or four will be necessary before peeling is over. During the treatment the urine must be examined and treatment should be stopped at once if albumin is found.

Such treatment is seldom used in this country, for it is difficult to control it exactly. At the best it takes more than a week, and there is always a possibility of too violent a reaction, a severely painful reaction and possibly pigmentation as a sequel. To obtain satisfactory results, it may have to be repeated.

### RECURRENT ULCERS OF MOUTH

To the Editor:—I have a patient who has recurrent ulcers in her mouth. They began to appear several years ago and have continued to occur at intervals of from two to three weeks until the present time. They appear in any portion of the mouth but are more frequent on the cheek, gums and side of the tongue. They require several days to reach their maximum size, remain for three or four days, and often require about five days to disappear. The ulcers are superficial, apparently involving only the mucous membrane. They are rarely larger than a millimeter in diameter, are smooth and have a whitish base. The patient says that they occur more frequently when she is fatigued. They also appear after eating more sweets than usual and she can depend on having the ulcers if she takes an alcoholic drink of any description. For the last two or three months they have been associated with a dull frontal headache. The time of occurrence is in no way related to the menstrual periods. Except for the ulcers and headache she is in good health. The bowels are regular. She takes a purgative when she has a headache but it does not seem to affect the headache or the ulcers. She does not have attacks of diarrhea, and she never suffers from gaseous indigestion. She has no sour eructation or heartburn. The respiratory, cardiac, menstrual and urinary histories are negative. The patient is a white woman, aged 26, and appears well nourished and in good health. She is slightly overweight. Her blood pressure, pulse and urine are normal. The Kahn test is negative. She is slightly anemic; the hemoglobin (Sahl) is 80 per cent. The basal metabolism, gastric analysis and stool analysis are normal. Repeated examinations of scrapings from the ulcers fail to reveal evidence of Vincent's infection. Examination of the mouth reveals excellent oral hygiene, numerous alloy fillings of the teeth, and one gold filling. There is no evidence of inflammation of the gums or of abscessed teeth. The tonsils have been removed. The general physical examination reveals no abnormalities. The patient has taken a low carbohydrate diet without any apparent results. She has taken Citro-carbonate without any apparent beneficial results. She has tried sodium perborate as a mouth wash and lozenges of potassium chlorate, without results. I should like to know the probable cause of the ulcers and the best treatment for them. Do you think the skin sensitization test with various food elements would be of any help in determining the cause? Is it possible that the alloy fillings of the teeth could be in any way responsible for the ulcers? Please omit name.

M.D., Alabama.

ANSWER.—The causes of ulcers of the oral cavity mucosa are multiple. The correspondent seems to have ruled out many, such as gastro-intestinal dysfunction, fungus infection, pyorrheal infection, reflex menstrual shock and pernicious anemia. There has not been ruled out the possibility of one of several skin diseases which are sometimes also manifest on the oral mucosa; namely, herpes simplex, pemphigus, lichen planus, lupus erythematosus and erythema multiforme.

However, there still remains the possibility of (1) food sensitization, (2) laxative drugs which contain phenolphthalein, or other well known chemicals to which many patients are sensitive (Shel mire, J. B.: *Certain Diseases of the Oral Mucous Membrane and Vermilion Borders of the Lips*, *South. M. J.* 21:169 [March] 1928) and (3) the possibility of electrogalvanism with deposition of ionized toxic metals contained in the dental fillings into the oral mucosa (Lain, E. S.: *Electro-galvanic Lesions of the Oral Cavity Produced by Metallic Dentures*, *THE JOURNAL*, March 11, 1933, p. 717; *Electro-galvanic Phenomena in the Oral Cavity*, *Dental Digest*, June 1934).

Scratch tests for food sensitization have been disappointing in many respects. Food tests by the elimination method seem to be the most popular at the present time.

Since the patient has multiple dissimilar metallic fillings, which always consists of from three to five different metals each, she doubtless has a perceptible galvanic battery present, regardless of the  $pH$  of the saliva. Of course, the  $pH$  of saliva varies with the change in diet and hence might affect the degree of current.

It has been proved, and many case reports are now available, that ulcers of the mouth may sometimes be cured by a removal of dissimilar metallic dentures.

If the correspondent can enlist the services of an electrical engineer with his delicate micro-ammeter or galvanometer, usually courteously furnished by the public telephone or electric power corporations, he probably can determine the possibility of electrogalvanism as the cause of the patient's stomatitis.



It has not yet been determined just what degree of current or length of time is necessary to produce such electrogalvanic lesions. Personal sensitivity to certain metals also may play an important part.

#### PRIMARY CARCINOMA OF LUNG

To the Editor—Reference is made to your book review on page 1709 of the Nov. 23, 1935, issue of THE JOURNAL where, in the fourth paragraph of the review of J. Arthur Myers' "Diseases of the Chest," the statement is made that primary carcinoma of the lung ranks today only second to gastro-intestinal malignancy in frequency. Further confirmatory information on this subject will be appreciated, especially in view of the statement made by Dr. Ewing in his most recent edition of "Neoplastic Diseases" that primary carcinomas of the lung account for only 1 per cent of all carcinomas (page 851, third edition). The latest edition of Stevens' "Textbook of Medicine" gives the total percentage of primary carcinoma of the lung as 5. The latest edition of Norris and Landis' "Diseases of the Chest" in quoting statistics from many different investigators gives 10 per cent as about the highest figure. Your comments on this subject will be appreciated.

S. C. KARLSTROM, M.D., Bath, N. Y.

ANSWER.—Primary carcinoma of the lung is much more frequent than the textbooks on medicine now state. Unfortunately the subject has not been given sufficient consideration, because the proportion of cases diagnosed during life was only 5 per cent twenty years ago. At present about 50 per cent are recognized in large clinics. The clinician who is familiar with the pathologic and clinical manifestations can recognize most cases from the history, physical examination and roentgen study. A bronchoscopic examination with bronchography is of great value in diagnosis.

Arkin and Wagner (THE JOURNAL, February 22, p. 587) state that primary lung cancer constitutes from 6 to 8 per cent of all carcinomas. They report 135 cases observed in four years and present the important clinical, pathologic and roentgen observations. Many German and Austrian pathologists have reported from 6 to 14 per cent of all carcinomas as primary in the lung. Dr. Richard Jaffé at the Cook County Hospital in Chicago found 724 carcinomas in 5,400 necropsies over a period of five years. Of these 724 cases of cancer, eighty-seven were primary lung carcinomas, making 12 per cent of the cases of carcinoma. Carcinoma of the stomach led, with 22 per cent.

Ewing's book on "Neoplastic Diseases" gives a much too low percentage for carcinoma of the lung, and the statement that only 1 per cent are primary in the lung will undoubtedly be revised in the next edition. Most textbooks on medicine, and some on diseases of the chest, will soon be obliged to do justice to this important subject. The great variability in the clinical manifestations still leads to frequent erroneous diagnoses, and too many physicians still look on primary lung cancer as a rare disease. The paper by Arkin and Wagner cites a number of references giving the frequency of lung carcinoma in various pathologic institutes.

#### OCCUPATIONAL HAZARDS IN BAKING INDUSTRY

To the Editor—I have noticed that a good many bakers have a rather pale, sallow, anemic appearance. I have had two patients who, after working in a bakery for a year or two, took on this peculiar appearance and lost considerable weight, although they had no specific complaints. Physical examination, blood count and urinalysis gave normal results. I have thought their condition was probably due to night work with irregular hours of sleeping and eating, or perhaps to inhalation of flour dust. Is there a tendency for occupational disease peculiar to the baking profession?

CHARLES D. WOOD, M.D., Lewistown, Mont.

ANSWER.—The modern baking industry suffers from a poor heredity. In times past justification existed for characterizing this trade as truly dangerous. The rates for pneumonia and tuberculosis were disproportionately high, skin diseases were prevalent, and "bakers' asthma" was well known to bakers and millers. The anemia of bakers was proverbial. Orthopedic conditions were so numerous that at least in foreign countries bakers' apprentices were rarely usable for full military services. In the causation of these unwanted conditions, responsibility must be placed not so much on specific hazards as on the general lack of sanitation in bakeries in olden times. High temperatures, associated with high humidity, created undue fatigue. Long hours of work and particularly work at night exacted a toll. Animal and vegetable parasites were so extensively present in bakeries as to make "bakers' itch" almost continually epidemic. Carbon monoxide from unsuited types of ovens constituted a common hazard. Wherever these conditions still persist, they serve as some proof of the lack of modern sanitation in the bakery industry. At the present time "bakers' itch" arises occasionally but is rarely epidemic. "Bakers' itch" is perhaps not one disease but several. The

chief causes are the bleaches introduced by millers into flours, sensitization to flour itself, and mycotic organisms chiefly derived from flour, but possibly spread from worker to worker. Bakers' anemia likewise is encountered from time to time, usually in proportion to the lack of modernness in the bakery. No precise cause has been found for this anemia and at times the condition constitutes a pallor without diminution in the cellular elements of the blood beyond normal limits. This pallor, which is nearly always accompanied by increased susceptibility to pyogenic infections and gastro-intestinal disorders, has been associated by some with mycotic disorders of the lungs, by others with exposure to high temperatures, and by still others to lack of personal cleanliness in removing the sugars, flours or salts from the skin. Flour dust is not responsible for any disease analogous to silicosis but it may be held responsible for low grade irritation of the eyes and respiratory tract. Millers' asthma or bakers' asthma may represent a sensitization to flour dust. All in all, the modern bakery must be extended credit for having eliminated many of its earlier objectionable work conditions, practices and materials.

#### INFECTIOUS ADENITIS OR MONONUCLEOSIS

To the Editor—A patient became ill, Oct. 1, 1935, with chilly sensations and a slight fever associated with loss of appetite. This phase lasted for a few days, when he nearly collapsed. He went home and to bed for the first time. The condition did not improve and he had three distinct chills at irregular intervals, one of which occurred during the night. His temperature was erratic but the peaks gradually became higher. During this period he developed a cough, which too became gradually worse. With this feeling of malaise, irregular temperature, rising to 104 at one time, cough and râles at the base of his right lung, the condition was diagnosed as influenza with a complicating bronchopneumonia at the right base. October 8 he was admitted to the hospital acutely ill with this sequence of symptoms. A complete blood count at this time showed white blood cells 5,000, red blood cells 4,890,000, hemoglobin 90 per cent, polymorphonuclears 70 per cent, eosinophils 1 per cent, transitionals 2 per cent, and lymphocytes 27 per cent. Agglutination tests for Brill's disease, undulant fever and typhoid were negative. The sedimentation rate was 60 minutes, 1 mm. No malaria was discovered. There was a faint trace of albumin in the urine. After seven days the irregular remittent fever began to intermit, ranging from 98 to 100 F. This variation with a morning subnormal temperature and an afternoon rise to 100 still continues. October 10 another blood count showed white blood cells 6,800, red blood cells 4,720,000, hemoglobin 86 per cent (Dare), polymorphonuclears, 71 per cent, transitionals 3 per cent, lymphocytes 26 per cent. The examination for malaria plasmodia was still negative. On or about October 22 he became aware of the presence of enlarged glands in the posterior cervical chain, the epitrochlear glands and both inguinal chains. There were no glands palpable in the anterior cervical chains, though the area was tender on both sides. These glands were enlarged, movable and tender. The manifestation was not accompanied by any pronounced febrile exacerbation. Though he was conscious of their presence, there was no spasticity of the muscle swelling nor any marked degree of discomfort. October 20 the blood examination showed white blood cells 12,700, hemoglobin 85 per cent, polymorphonuclears 64 per cent, eosinophils 1 per cent, transitional 3 per cent, lymphocytes 32 per cent. October 25 the blood picture showed white blood cells 14,600, red blood cells, 4,850,000, hemoglobin 84 per cent, polymorphonuclears 35 per cent, eosinophils 1 per cent, monocytes 6 per cent and lymphocytes 58 per cent. The notation of the technician calls attention to the slight leukocytosis and decreased polymorphonuclears. The lymphocytes and mononuclear cells totaled 64 per cent. Lymphoblasts were present. The laboratory conclusions suggested infectious mononucleosis in a rather early stage. The agglutination test for undulant fever was slightly positive, 1:20 plus, 1:80 negative. The typhoid test, 1:20, was very slightly positive (the patient has been vaccinated for typhoid several times). Physical examination reveals enlarged, movable, tender glands in the stated areas, no spasticity of the muscles, no marked rise of temperature, no pronounced discomfort and no perceptible enlargement of the liver, nor is the spleen palpable. The man is in his early forties. With this history before you, can you venture a diagnosis? Is this an adenitis complicating influenza or is it an infectious mononucleosis?

M. D., Georgia.

ANSWER.—From the facts stated, the most likely diagnosis is a postinfectious adenitis and lymphocytosis. The history, clinical course and blood counts do not suggest an infectious mononucleosis. If, in the presence of a lymphocytosis, the question of infectious mononucleosis arises, the test for the presence of heterophile antibodies should be done. The finding of an elevated titer of agglutinins for sheep red cells in a person who has not recently received an injection of horse serum indicates with a high degree of probability the presence of infectious mononucleosis. A titer in excess of 1:160 should be considered as a positive reaction. The test is positive in some cases for months after the abnormal lymphocytes disappear.

If the correspondent is interested in performing the test the recent modification of Davidsohn is advised, as it is quicker and more sensitive than the other technics (*Am. J. Dis. Child.* 49:1222 [May] 1935).

## PERSISTENT SCROTAL DERMATITIS

*To the Editor:*—I would appreciate any advice you can give me as to diagnosis and therapy in the case of a man, aged 55, single, who has had in the past few years recurrent attacks of itching, burning, fissuring and desquamation of the scrotum. Occasionally he also has recurrent attacks of dryness, fissuring and desquamation of the finger tips, which has responded to the usual squamous eczema treatment, but the scrotum has not improved under this treatment. He also has occasional attacks of vertigo, gastro-intestinal disturbances and headache. There is no constipation and no indigestion after eating. Kindly omit name.

M.D., Pennsylvania.

**ANSWER.**—Recurrent attacks of dermatitis, as described, may be of fungous origin associated with tinea involvement of the groin, feet or hands. It may also be of constitutional origin associated with diabetes or nephritis. If careful examination rules out any of these as etiologic agents, the condition would fall into the eczema group, and consideration must be given to allergic causes, a seborrheic background or an underlying neurogenic factor.

The association of fissuring and desquamation of the finger tips may be on a tinea basis, the hands being involved with a toxic dermaphytid secondary to a tinea infection of the scrotum, groin or feet.

After specific treatment of any known etiologic factor, local soothing therapy to the affected parts should be employed. The use of bland ointments, 3 per cent crude coal tar ointment, 1 per cent phenol in lotion or bland ointment, and solution of aluminum subacetate, 1 to 16, as wet dressings are advised. Occasional fractional doses (50 roentgens) of x-rays at weekly or biweekly intervals can be employed, if local therapy is of no avail. This, however, must be used with great caution and full realization that x-rays in the scrotal area may have the effect of producing sterility. The internal administration of calcium, fortified by sedatives, for a short period is also of value in the obstinate cases.

## LATENT INFECTION AS CAUSE OF SEPSIS

*To the Editor:*—I believe that many deaths due to septicemia post partum are perhaps due to "benign" septic abortions (illegal) incurred prior to the fatal conception. I mean that perhaps an illegal abortion that was apparently aseptic is the cause of the instillation of an avirulent focus which lies dormant and then later owing to lowered resistance in the progress of a normal labor "flares up" and becomes virulent, resulting in septicemia and death regardless of the most rigid aseptic technic in the conduct of the fatal labor. I have never had a case of septicemia and hope I never do. It is my conviction that a doctor with intelligent technic delivering in the home or the hospital is rarely if ever the primary cause of septicemia in labor. It would be interesting to know what percentages of cases of maternal mortality due to septicemia incurred in hospitals had an antecedent history of abortion prior to the fatal conception.

MICHAEL SMITH, M.D., Gilbertsville, N. Y.

**ANSWER.**—Many thoughtful obstetricians have entertained the same idea that an infection can remain latent in the genitalia for many years after its reception. The gonococcus dies off quickly, in four or five months, but the streptococcus can persist in the tubes and in the broad ligaments for years.

In medicolegal cases such knowledge is important, and without a doubt these latent infections can bring on serious complications after any local intervention such as therapeutic abortion, diagnostic curettage, cesarean section with or without sterilization, or even normal labor. Fortunately such cases are rare, and in the majority of instances in which infection has resulted from intervention or natural delivery some extraneous cause is usually operative.

## EXCESSIVE GROWTH IN INFANTS—PINK DISCOLORATION OF STOOLS

*To the Editor:*—1. A male baby that weighed 8 pounds (3.6 Kg.) at birth weighed 16 pounds (7.3 Kg.) when 9 weeks old. It is well proportioned and breast fed. Can you give me information relative to rapidly growing babies, cause and treatment? There is no evidence of pathologic conditions in either parent or child. 2. What would cause a pink staining of the diapers from bowel movements of a baby who suffers from colic? Please omit name.

M.D., Nebraska.

**ANSWER.**—1. It is difficult to account for rapid growth in infants. Sometimes perfectly normal babies take on an accelerated growth and frequently develop to be persons of large stature. This may depend on endocrine function, which may be very active, though within normal physiologic limits. On the other hand, there may be an abnormality in the function or structure of the pituitary gland. In such a case one would expect to find concomitant symptoms arising from that gland, such as acromegalic manifestations in the upper or lower extremities, or in the formation of the jaw, or marked polyuria.

If the child presented the abnormal condition known as gigantism, one would observe rapid increase in the growth of the skeleton with a corresponding delay in ossification. These patients also show muscular weakness and more or less failure of mental development. They may show some benign or malignant new growth of the pituitary gland.

2. A pink discoloration of the stools is sometimes due to the presence of urates in the urine, which give a pink color around the margin of the stool. The color may sometimes be caused by an oxidation process of the bile salts. There may be no association between the pink stools and the colic. On the other hand, it is conceivable that an infant who is passing a considerable quantity of urates may be suffering from irritation or pain that originates in the urinary organs.

## BURNS FROM MERCURY OINTMENT

*To the Editor:*—May 21 a patient stated that she had put on her skin some ammoniated mercury for a skin rash (scabies), which a druggist told her would cure the itch. Almost at once, she stated, it began to burn and before she could remove the ointment she was severely burned. On examination I found a second degree burn over the entire abdomen, both breasts and right shoulder and a first degree burn on both arms and hands. The patient is now bringing a lawsuit against the chain drug company for damages. I tested the patient with ammoniated mercury, using a standardized preparation from Parke, Davis & Co. This produced no ill effects on her skin. This, I feel, ruled out her idiosyncrasy to ammoniated mercury. Now the question in court is Can ammoniated mercury produce this burn? Is it possible for this drug to break down and give a mercury burn? Or what explanation can be given for this burn?

M.D., Ohio.

**ANSWER.**—The failure of reaction in a patch test, or even several patch tests, does not entirely rule out sensitization to the material tested. The sensitization may be localized, or it may increase or decrease with variations in the general condition of the patient. It does, however, have some weight against sensitization. That is, it would be a rare case of widespread sensitization of any great degree that would fail to react if tested several times.

Hypersensitivity to ammoniated mercury is not uncommon. Theoretically, an ammoniated mercury ointment might become more irritating on aging from the formation of fatty acids in the menstruum or from other chemical changes. No experimental or clinical evidence has been found in favor of this theory. Light also affects ammoniated mercury, but the mixture in ointment would probably prevent any such reaction.

A familiar cause of burns from ammoniated mercury is the preceding use of tincture of iodine. This may produce a violent dermatitis. The latter occurs frequently in the experience of dermatologists. Tincture of iodine followed by ammoniated mercury ointment has been used therapeutically over small areas in the treatment of lupus erythematosus when considerable local irritation is desired.

The druggist should be condemned for counter prescribing. In giving a patient ammoniated mercury ointment as treatment for the itch he exposed her to a much greater injury than the burn mentioned. There are in the literature records of a number of fatal cases of mercury poisoning caused by the recommendation by ignorant persons of the use of mercurial ointments for the treatment of scabies.

## PATCH TESTS IN IVY POISONING

*To the Editor:*—I am located in the Middle West where there is constant trouble from dermatitis of vegetable origin. Poison ivy, poison oak and other vegetation cause dermatitis. My difficulty is a differential diagnosis of the type. Is there any way of differentiating between the types? The proper diagnosis is very essential in the type of treatment and the results obtained.

ROBERT H. KERR, M.D., Alman, Neb.

**ANSWER.**—The most practical way in which to determine the offending plants probably would be by means of patch tests. A patch test is made by applying a small square of gauze containing some of the leaf on an area of thin, nonhairy skin, and of course an area showing no evidence of inflammation. The skin of the arm or the chest is usually suitable for testing. The square of gauze is then covered with waxed paper, cellophane, oiled silk or gutta percha and fastened to the skin with adhesive tape. It is held in place for twenty-four hours or, if the patient feels no discomfort, for forty-eight hours. The site is then examined for evidence of inflammation. If there is such evidence it usually indicates that the substance in the patch is the source of the trouble. It has been noted in some cases that the skin will not react if the test is made on an area that has never been affected, although it may be positive if the test is performed on an area that was formerly affected; i. e., a local hypersensitiveness has developed. And also it might be well to perform control tests with the covering substance and the

adhesive plaster, although it is seldom necessary because irritation from these sources is usually obvious. Of course, each of the suspected plants should be tested separately. The treatment, except for prophylactic treatment, would be the same regardless of what plant was at fault.

#### TREATMENT OF UTERINE FIBROIDS

*To the Editor:*—A woman, aged 43, has a fibroid uterus the size of a fourth month gestation. There are no symptoms of pressure or menstrual disturbance. The menses are regular and of the usual periodicity and duration. The condition was noted by chance during a routine examination. What procedure of treatment should be adopted—x-ray, surgery or "let alone"? What are the chances of shrinkage accompanying the involutionary changes at the menopause? Kindly omit name.

M.D., New York.

**ANSWER.**—The great majority of women with symptomless tumors of modest size do well with palliation. Unfortunately, a modest percentage develop serious complications. For example, even in capable hands a malignant growth sometimes escapes detection under the guise of simple tumors. In many instances also the growth is adenomyomatous and predisposed to develop malignant changes.

In the case at hand, the patient having attained the age of 43, surgical intervention is not urgently indicated, although it is probably preferable to palliative care or irradiation.

Roentgen and radium therapy are usually reserved for bleeding tumors; these should be not larger than the size of a four months pregnancy and the patient well beyond 40 years of age, preferably near the menopause. A diagnostic curettage should always precede their irradiation to rule out the possibility of a malignant condition.

One is warranted in assuming that fibroids will not enlarge greatly in a patient at or near the menopause, but decrease in the size of the tumors is usually not evident until later.

#### USE OF OPERATING ROOM FOR PERFORATION IN TYPHOID

*To the Editor:*—Question came up at the staff meeting about using the operating room for perforation in typhoid cases. Part of the staff members were in favor and part were against taking this patient to the operating room. Also would there be any particular kind of disinfecting of the operating room other than would be used in ordinary pus cases? This is a fifty-bed hospital.

GEORGE W. WOOD, M.D., Carthage, Mo.

**ANSWER.**—The precautions in the transportation and surgical preparation of a typhoid patient would be similar to those of one with a pyogenic infection or with a chronic active infection such as tuberculosis.

The secretions or discharges must always be protected, while in typhoid one must consider in addition that the urine and feces are infected.

Similar disinfection and disposal of all linen and materials with recognized cleanliness and use of antiseptics by the personnel handling the patient are equally satisfactory.

In some hospitals, separate operating rooms are used for clean and for infected cases. Even then it is not always possible to segregate them.

Care is generally taken that no operation in a clean case be performed following any operation in a case of infection until the entire operating room has been cleaned and all instruments and linen removed and changed, regardless of whether they have been used.

#### DIATONE—AN ALLEGED INSULIN SUBSTITUTE

*To the Editor:*—I have just received a sample lot of tablets labeled Diatone, put out by Diabetic Diatone, Inc., 765 Oakwood Boulevard, Chicago. It is stated to be a colloidal preparation of uranium and, it is claimed, will take the place of insulin in the control of diabetes. They claim that in producing uranium in a colloidal form they thereby remove the toxic qualities of uranium. I have found in Merck's Index that nitrate of uranium has been used as an antidiabetic remedy and from the same source learn that uranium is quite toxic. Can you give me any information on this preparation called Diatone?

M.D., New York.

**ANSWER.**—According to the advertising literature in the files of the Council on Pharmacy and Chemistry, Diatone is claimed to contain in each 5 grain tablet "1 grain of colloidal uranium, together with whole pancreatic substance (which is employed simply as an intestinal digestant and not as a hormone substitute) together with other [sic] excipients." Diatone is proposed by the firm for oral administration in the treatment of diabetes.

As yet there is no preparation for oral use that can adequately substitute for insulin in the therapy of diabetes. Diatone, if it contains the amount of uranium that the firm claims it does,

must be classed as a dangerous preparation. According to Sollmann (Manual of Pharmacology, ed. 4, Philadelphia, W. B. Saunders Company, 1932) "the soluble uranium nitrate has been used in diabetes mellitus and phthisis in doses of . . . 1 gr. . . largely diluted. The results are too indefinite to justify the further employment of so dangerous an agent." Sollmann states further that uranium "salts are very corrosive, consequently readily absorbed, and highly toxic. Their systemic effects are similar to other metals, with a special paralytic effect on respiration; this resembles cyanide poisoning superficially. They produce a characteristic nephritis; glycosuria: and a unique edema."

While the exact nature of the uranium in Diatone is not clear, even if this is in the form of the metal or of one of the relatively insoluble uranium compounds, such as the oxide, enough uranium may nevertheless be absorbed, through the solvent action of the hydrochloric acid of the gastric juice, to produce serious systemic poisoning.

#### RECURRENT ABDOMINAL PAIN

*To the Editor:*—I would appreciate your advice concerning a girl, aged 10, having a history of abdominal trouble since childhood. For the past few years she has been seized with abdominal pain, usually beginning at week ends, especially after romping about. During the attack the patient pales, draws up her knees, and complains of pain about the umbilicus. There is no rise of temperature and no abdominal rigidity and tenderness on pressure about the umbilicus. Occasionally the attack is accompanied by emesis of colorless mucus. The heart, lungs and reflexes are normal.

M.D., Ohio.

**ANSWER.**—Recurrent attacks of abdominal pain over a period of years may necessitate a rather complete study in order to arrive at a satisfactory diagnosis. The possibilities as to the cause are many. Abdominal pain and vomiting are symptoms frequently seen in many disturbances in childhood and of themselves are not sufficient to arrive at any definite conclusion. The child's habits of eating, play and routine should be investigated, especially as the attacks tend to recur during the week ends. Fatigue, excitement and dietary changes at these times may be a big factor.

The possibility of abnormalities of the intestinal tract must be considered, although the prolonged period and frequency of the attacks rather argue against such conditions as chronic appendicitis, volvulus, mesenteric bands or congenital malformations. Functional conditions, such as slow gastric emptying time, may well be seriously considered. The possibility of an allergic reaction because of the periodicity of the attacks should be investigated. The presence of a history of eczema, asthma or hay fever would strengthen such an idea. Different contacts during the week end might be investigated.

#### DIAGNOSIS OF GONORRHEA

*To the Editor:*—A widow with no past history of gonorrhea infection, with one child, is engaged to a young man, and they had intercourse. Seven days later the young man developed a typical gonorrheal infection. He states that there was absolutely no other chance of infection, he not having had intercourse for the six months previous to this. On examination of the patient, the woman in question, the cervix appears entirely normal; there are no palpable masses, and the uterus is freely movable. I have made fifteen or twenty slides and have been unable to find any intracellular diplococci. There are a few gram-positive diplococci, which are not intracellular. I have told her that I am unable to make a positive diagnosis of gonorrheal infection in her case. They are still anxious to be married, and the information asked for is what assurance can be given the patient that she is not infected or that she might not subsequently reinfect her partner. I have instructed them that the danger of her being infected by him would be great, and that they were not to have intercourse for at least one year after he was pronounced cured, except when using condoms. Kindly omit name.

M.D. California.

**ANSWER.**—Assuming that the history is correct, the widow unquestionably has gonorrhea despite the negative results of examination, and no assurance can be given that there will be no future transference of infection.

Often it is possible to find the gonococcus in seemingly normal cases by carefully removing the cervical plug, squeezing the cervix with a pair of forceps and securing material from the cervical mucosa on a small swab that is rubbed into it. Skene's glands often do not emit macroscopic pus, though the gonococcus is present. They should be digitally stripped against the pubic bone and the secretion obtained by rubbing a small swab into the urethral floor just inside the urethral meatus.

Bartholin's glands should be kneaded digitally and any fluid forced out obtained on a swab or wire loop.

It is in such cases that the complement fixation test finds a special field of usefulness.

## REMOVAL OF CLOTTED BLOOD FROM THE BLADDER

*To the Editor:*—In a case of bladder carcinoma in which active bleeding, controlled one week before by suprapubic approach, occurred, what chemical means are there for dissolving or disintegrating obstructive blood clots in the bladder in order to facilitate vesical irrigations through a urethral catheter? The patient is a white man, aged 42, with a moderately severe anemia secondary to an infiltrating, inoperable malignant growth of the epithelial type. The tumor has been under observation for the past three years, during which time it has been subjected to high voltage roentgen therapy. Recently it presented a small area of ulceration, preoperative deep irradiation and cystoscopic fulguration of which were ineffectual in checking the hemorrhagic oozing. Saline irrigations at present return without evidence of fresh bleeding. The bladder is markedly contracted. Please omit name and address.

M.D., New York.

**ANSWER:**—Various chemical means have been tried for the purpose of dissolving and disintegrating massive blood clots in the bladder, but not with much success. Papain, which is a digestive ferment, has been used most frequently for this purpose. It is sold under different trade names, such as caroid.

It is usually necessary to remove clotted blood from the bladder by mechanical means. This is best done by the introduction of a tube of large caliber with a wide open end, to which a large syringe with powerful suction should be attached. The removal of obstructing blood clots in itself usually will tend to prevent further bleeding, unless there is an active bleeding vessel. A blood vessel of this type can best be controlled by electrocoagulation applied directly to the bleeding point. In malignant conditions it can sometimes be controlled by inserting multiple seeds containing radon into the submucosa of the area affected. Diffuse mucosal oozing may be more difficult to stop. The application of an aqueous solution of alum is sometimes of value. Continuous and intermittent lavage of the bladder after the clots have been removed is of the greatest importance to prevent further formation of clots.

## AIR FILTERS AND HAY FEVER

*To the Editor:*—I am installing in my home a central heating and air conditioning system, which I hope will relieve hay fever suffered by my daughter, aged 9, during the summer months. I should like to know the material or type of filters best suited to the removal of pollen in such an installation. Please omit name.

M.D., Connecticut.

**ANSWER:**—Air filters used for pollen filtration should have a large surface area obtained by fluting the filter surface. This permits the current of air to be delivered at a slow velocity. The surface area required depends on the cubic content of the space to be air conditioned. It is best to recirculate the air through the filter, taking in only a small amount of outdoor air in order to avoid bringing in a large amount of pollen from outdoors.

Material made of cellulose, used in from six to twelve layers, has been found to be an excellent filtering medium. This should be in a frame that is air tight and will permit the easy change of filters. This is required about once a week.

An engineer who is experienced in the problems presented by air conditioning should supervise all plans for the installation of the system. A great advantage for the sake of comfort is air cooling in addition to filtration.

## ABSCESS OF LOWER END OF TIBIA

*To the Editor:*—A woman, aged 24, complains of severe pain in the region of the ankle. The tenderness is localized over the lower end of the tibia, and she has a temperature of 101 F. The past history reveals that fifteen years ago she had what was interpreted as tuberculosis of the bone (in the same area) and after wearing a cast for four months was completely relieved. A roentgenogram taken recently shows a triangular area of necrosis in the lower end of the tibia with its base facing the ankle joint. She has now been wearing a cast for a period of three weeks but there has been no relief of pain and she continues to have a fever of 100.5 F. daily. There is no history of trauma and the physical examination is essentially negative otherwise. Can you suggest any further treatment. Kindly omit name.

M.D., New York.

**ANSWER:**—This is evidently a localized abscess in the lower end of the tibia, of the Brodie type, probably due to a *Staphylococcus albus* infection. It is possibly a recrudescence of the original trouble of many years ago.

In view of the elevation of the temperature and the local tenderness, an immediate operation should be performed.

An incision three-fourths inch long should be made, under local anesthesia with 1 per cent procaine hydrochloride, over the lower end of the tibia, in the neutral space between the tendons of the tibialis anterior and the tibialis posterior. The

cortex of the bone should be drilled with a one-eighth inch drill, and the necrotic cavity penetrated. If pus exudes, it should be sent to the laboratory for examination by smear and culture. The incision should be left open and a petrolatum gauze dressing applied. There will be a moderate drainage for a considerable time, and the wound will then gradually close.

It is usually not necessary to open the bone widely in cases of this kind; in fact, they heal much more quickly than if the bone is saucerized.

## TRAVELING EXPENSES DEDUCTIBLE

*To the Editor:*—Are expenses incurred by a physician in attending medical meetings deductible in the computation of his federal income tax? I have been informed by an income tax examiner that such expenses cannot be deducted.

M.D.

**ANSWER:**—Traveling expenses, including amounts paid for transportation, meals and lodging, incurred in attending medical meetings for a professional purpose are deductible for federal income tax purposes. The Board of Tax Appeals has so held in *Cecil M. Jack v. Commissioner of Internal Revenue*, 13 B. T. A. 726, and in the case of *J. Bentley Squier*, 13 B. T. A. 1223. The attention of the examiner should be directed to these decisions.

## NERVOUS EXAGGERATION OF GAG REFLEX

*To the Editor:*—I have a patient whose only significant symptom is an exaggerated gag reflex and an unusual consciousness of his soft palate. The patient is a healthy middle aged adult who has had this symptom for approximately eight weeks. Every morning during this time, except two, he has had gagging and retching after breakfast and occasionally has regurgitated a little food. During the rest of the day the reflex is much less active, but he is almost always conscious of a peculiar sensation in the soft palate. I have had his nose and throat examined under local anesthesia and they were pronounced normal. The patient is not neurotic in any ordinary sense of the word but of course is extremely annoyed by this abnormal sensation. I have tried sodium bromide, 60 grains (4 Gm.) a day, with slight relief, but the appearance of a bromide skin eruption forced discontinuance of this treatment. No one to whom I have referred the patient has seen a similar case, nor have I. Is there any possible cause for this or can you suggest any outline of treatment? Please omit name.

M.D., Michigan.

**ANSWER:**—The symptoms described are not characteristic of any known organic lesion in the nose, throat or esophagus. If examination of these organs has failed to reveal the presence of disease, it can be concluded with safety that the discomforts are entirely nervous in origin. An exaggeration of the gag reflex is not uncommon, and it is likely that the recent intensification of this symptom is based on psychic factors. Fear of organic disease, particularly tuberculosis and carcinoma, is a frequent cause of such distress. Assurance to the patient of the absence of any serious lesion is of more value in treatment than the employment of sedative drugs.

## FROZEN MILK

*To the Editor:*—THE JOURNAL, February 15, page 562, carried a query and answer under the heading "Use of Frozen Milk in Infant Feeding." May I point out that the observations on cow's milk that has frozen do not seem to apply to human milk that has been frozen for the purpose of preservation? The process of freezing human milk was described by Mr. Washington Platt and by me in the *Journal of Pediatrics* (2: 472 [April] 1933) and the *New England Journal of Medicine* (209: 893 [Nov. 2] 1933). At the Directory for Mothers' Milk in Boston we have been freezing human milk for three years, and up to the present time have distributed 25,259½ ounces with perfect satisfaction. The milk goes back into emulsion perfectly, the bacterial count is extraordinarily small, and the process is a very quick one and adequately bridges the gap between surplus and deficit. Frozen milk was the only form in which the air express would accept milk for transportation.

PAUL W. EMERSON, M.D., Boston.

## IRRADIATION OF OVARIES IN CANCER OF THE BREAST

*To the Editor:*—In THE JOURNAL, March 14, page 944, is a reply as to the advisability of irradiation of the ovaries in cases of cancer of the breast, in which the statement is made that "roentgen therapy to the ovaries has no place in cases of cancer of the breast." I believe this statement to be contrary to the accepted beliefs of the majority of workers in the fields of cancer and radiology. Not only is such treatment decidedly helpful in the cases of those women who have not passed through a natural menopause, but it is probable that, before long, pituitary irradiation will also be used in the treatment of cancer of the breast. The latest experimental work so far concluded would seem to indicate that irradiation of the pituitary would be a logical procedure.

HAROLD A. HILL, M.D., San Mateo, Calif.

## Medical Examinations and Licensure

## COMING EXAMINATIONS

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**INDIANA** Indianapolis, June 23 25 Sec, Board of Medical Registration and Examination, Dr William R Davidson, Room 5 State House Annex, Indianapolis

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**KANSAS** Topeka June 16 17 Sec Board of Medical Registration and Examination Dr C H Ewing, 609 Broadway, Larned

**KENTUCKY** Louisville, June 10 12 Sec, State Board of Health Dr A T McCormack, 532 W Main St, Louisville

**LOUISIANA** New Orleans, June 4 6 Sec, Dr Roy B Harrison, 1507 Hibernia Bank Bldg, New Orleans

**MAINE** Augusta July 7 8 Sec Board of Registration of Medicine Dr Adam P Leighton, 192 State St, Portland

**MARYLAND** Medical (Regular) Baltimore, June 16 Sec Dr John T O'Mara, 1215 Cathedral St, Baltimore Medical (Homeopathic) Baltimore, June 9 10 Sec, Dr John A Evans, 612 W 40th St, Baltimore

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## Illinois January Examination

Mr Homer J Byrd, superintendent of registration, Department of Registration and Education, reports the written and practical examination held in Chicago, Jan 28-30, 1936 The examination covered 10 subjects and included 100 questions An average of 75 per cent was required to pass Eighty-seven candidates were examined, 85 of whom passed and 2 failed The following schools were represented:

School	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1932)	87	
Chicago Medical School	(1930)	83,	
(1934) 79 80,* (1935) 77, 79, 80, 82, 88, (1936) 80, 81, 81* 83, 85, 85 86*			
Loyola University School of Medicine	(1935)	80,	
82* 83* 86, 87,* (1936) 81 86			
Northwestern University Medical School	(1934)	90 *	
(1935) 83, 83,* 84, 84, 84 85,* 86, 87, 88, 90,* (1936) 86†			
Rush Medical College	(1935)	82	
83, 83, 85 85,* 86, 86, 87, 87,* 88, 88,* 89			
School of Medicine of the Division of the Biological Sciences		85, 86, 86	
University of Illin	(1935) 82,† 82 ‡	4)	83,
87, 87, 87, 87, 88			
University of Minnesota Medical School	(1935)	87	
St Louis University School of Medicine	(1921)	77	
Medical College of the State of South Carolina	(1924)	85*	
Baylor University College of Medicine	(1929)	85*	
University of Wisconsin Medical School	(1934) 77,*	85*	
University of Toronto Faculty of Medicine	(1934)	82*	
McGill University Faculty of Medicine	(1910)	83	
Medizinische Fakultät der Universität Wien	(1930)	82‡	
Eberhard Karls Universität Medizinische Fakultät, Tübingen	(1924)	83	
Friedrich Wilhelms Universität Medizinische Fakultät, Berlin	(1927) 82,‡ (1933)	81	
Hamb		82‡	
Julius		Fakultät,	
Würzburg	(1915)	83‡	
Schlesische Friedrich Wilhelms Universität Medizinische Fakultät, Breslau	(1900)	81‡	
Universität Leipzig Medizinische Fakultät	(1927)	81**	
School	FAILED	Year Grad	Number Failed
Chicago College of Medicine and Surgery	(1914)	1	
Universität Zurich Medizinische Fakultät	(1934)	1	

Twenty-eight physicians were successful in the practical examination held in Chicago, January 30, for reciprocity and endorsement applicants The following schools were represented:

School	PASSED	Year Grad	Reciprocity with
University of Alabama	(1927)*	Arkansas	
College of	(1933)	Maine	
University,	4), (1935)	California	
Indiana Un	(1933)	Indiana	
State Unive	(1927),		
(1930 2), (1934) Iowa			
University of Kansas School of Medicine	(1932)	Kansas	
University of Minnesota Medical School	(1932)	Minnesota	
St Louis University School of Medicine	(1932)	Missouri	
Washington University School of Medicine	(1931)*	Wisconsin,	
(1933) Missouri			
Creighton University School of Medicine	(1931)	Indiana	
New York University, University and Bellevue Hospital Medical College	(1921)*	Missouri	
Medical College of Ohio	(1908)	Ohio	
University of Cincinnati College of Medicine	(1933)	Ohio	
Western Reserve University School of Medicine	(1931)	Ohio	
Woman's Medical College of Pennsylvania	(1932)	Ohio	
Meharry Medical College	(1930)	Georgia	
School	PASSED	Year Endorsement Grad	of
Yale University School of Medicine	(1929)*	B M Ex	
Loyola University School of Medicine	(1935)*	B M Ex	
Northwestern University Medical School	(1935 2)*	B M Ex	
Harvard University Medical School	(1923),*	B M Ex	
Duke University School of Medicine	(1933)*	N B M Ex	

\* License has not been issued

† M D degree and license have not been issued

‡ M D degree has not been issued

§ Verification of graduation in process

\*\* Verification of graduation in process License has not been issued

## Book Notices

**The Anatomy of Personality.** By Howard W. Haggard, M.D., and Clements C. Fry, M.D. Cloth. Price, \$3. Pp. 357, with 10 illustrations. New York & London: Harper & Brothers, 1936.

Evidently the Greeks had a word for it, since Theophrastus some 2,300 years ago left us a discussion of various types of personality. The poets and the playwrights have been doing the same indirectly, and scientists and pseudoscientists have spoken from their lofty eminences concerning that elusive quality of the human being known as personality. Haggard and Fry have attempted a serious study of the personality of man based on an analysis of the more or less measurable qualities, of which they choose (1) the physique, (2) the impulse or driving force, (3) the intelligence, (4) the temperament and (5) the ego. The first three need no particular discussion in this review. The temperament is still further subdivided into tempo, mood and resonance (depth of feeling). As far as the ego is concerned, individuals with strong egos are divided into the egoists, who are impervious to external criticism, and the egocentrics, who are constantly on the defensive; and these two are contrasted with "those meek souls with weak ego who we are told with dubious logic 'will inherit the earth.' Certainly they will acquire it in no other manner." The book presents a number of clinical documents sympathetically considered and is remarkable for at least one omission, the "inferiority complex," which is spread over the pages of most books devoted to popularizing the study of the mind. Moreover, the words "Oedipus complex" occur only once. The authors acknowledge their debt to Eugen Kahn, whose teachings can be followed through the chapters on temperament and ego. The book is written in a straightforward and interesting manner and is not too advanced in its terminology and language to confuse the educated layman. There are a few statements that are ill advised, such as "The regrettable dictum of fashion is now to breed for leptosomes"; but these are Haggardisms and do not impair the value of the book. In writing the book the authors state: "It is our hope that our reader will obtain some insight into his own personality that gives the understanding of self which is the first step towards self improvement; and also some insight into the peculiarities of others which is the first step towards the broad tolerance that gives respect for fellow men."

**A Clinical Text-Book of Tropical Medicine.** By Dr. C. D. de Langen, Professor of Medicine in the Medical School of the University in Batavia, Java, and Dr. A. Lichtenstein. Done into English by Dr. A. H. Hamilton, B.A., M.D., L.M.B.D. First English edition from the revised third Dutch edition. Cloth. Pp. 557, with 51 illustrations. Batavia, Surabaya & Amsterdam: G. Kolff & Co., 1936.

According to the authors, clinical medicine in the tropics, as compared with that of the temperate zones, differs less in the particular diseases with which it deals than in their relative frequency, their different groupings, and the difference in the clinical courses which they run. The authors, however, fail to note that, in a few instances at least, the geographic distribution of certain intermediate hosts of pathogenic parasites of man restricts certain diseases, such as clonorchiasis and African trypanosomiasis, to the tropical or subtropical regions. However, even these restrictions are not zonal but rather geographic or even ecologic, and are correlated with a high degree of host specificity. The phrase "tropical disease" is therefore somewhat of a misnomer, but the results of the practice of medicine in the tropics tend increasingly to demonstrate the importance of the climatic factor in the incidence, clinical picture, treatment and prognosis of particular diseases. Therefore the authors state that it is their purpose to supplement existing textbooks of internal medicine along these distinctive lines.

Illustrations of these contrasts in disease in temperate and tropical conditions appear in the discussion of cancer. Whereas the same types of cancer occur in Holland and in Java, cancer of the stomach is responsible for half of the deaths due to cancer in Holland and is rarely seen in Java. On the other hand, primary carcinoma of liver cells is seldom seen in Europe but is relatively common in Java, where by the end of 1932 about 390 cases in Malays and Chinese had been recorded, none

of which had been included in Herscheimer's (1930) 600 cases in the world literature. Malignant growths also tend to be frequent on the sides of the neck and on the legs and feet. The authors emphasize the biologic significance of experimentally induced nematode (*Gongylonema*) sarcoma and of cestode (*Taenia*) sarcoma in rats but do not hint that there may be any connection between amebic hepatitis and hepatic cancer, both of which seem to be rather prevalent in Java.

A second illuminating comparison of temperate and tropical diseases appears in the discussion of psychoses. In general the authors incline to the view that the psychoses of Europeans in the tropics show no essential differences in kind from those seen in temperate regions. Even "amok" and "koro" (an anxiety neurosis involving a fear of a fatal shrinkage of the penis) can hardly be regarded as either racial or tropical in origin. It was quite the custom for native patients in the various hospital wards of the old hospital in Batavia to run amuck, but after removal to the new modernized quarters at Weltevreden these maniac outbreaks abruptly ceased.

The Dutch text of this book ran through three editions in ten years and has had the benefit of revision. The authors' experiences as professor of medicine in the University at Batavia, Java, and as lecturer in the military course in tropical medicine have afforded rare opportunities for practical contacts with the problems of disease in the tropics among white persons, Malays and Chinese under exceptional conditions as to modern facilities, incidence and opportunities for experimentation and control.

As might be expected in this treatise, malaria, yaws, typhus, dengue, leprosy, plague, the dysenteries, hookworm, beriberi and tropical liver loom into the foreground. The authors are less sanguine about the effectiveness and practicality of malarial prophylaxis by mosquito control than Americans having only a narrow strip of the Canal Zone controlled by a war department in which to demonstrate its value. They incline somewhat to quinine prophylaxis, are cautious about the toxic aspects of plasmochin, and are rather hopeful that atabrine may prove to be the prophylactic of the future.

In their discussion of amebiasis they regard amebic hepatitis as one of the causes of "tropical liver" and as originating from chronic amebiasis. They ill advisedly use the name *tetragena* instead of *histolytica* and make no mention of carbarsone and vioform for the treatment of amebiasis.

The book is a rich mine of information derived from long practical experience in which most often major well known diseases of temperate regions appear in a more or less new light. It seems probable that its perusal might illuminate "temperate" medicine. It is a vivid demonstration of microbial and parasitic origins of disease and at the same time a powerful argument for the interacting factorial bases for the disturbances of the norm in man by such patent factors in vital processes as temperature. It is well conceived, well organized and well written, but the illustrations are as a whole inferior in plan and execution.

**Veterinary Military History of the United States: With a Brief Record of the Development of Veterinary Education, Practice, Organization and Legislation.** By Louis A. Merrill, Lt. Col., Vet.-Res., Chief Veterinarian, First Army, American Expeditionary Forces, and Delwin M. Campbell, Lt. Col., Vet.-Res. Sponsored by the American Veterinary Medical Association. In two volumes. Cloth. Price, \$10, per set. Pp. 620; 621-1,172, with illustrations. Chicago: Veterinary Magazine Corporation, 1935.

The authors undertook for the first time to write an American veterinary history, a task which was difficult because of the scarcity of authentic records. Veterinarians have participated in all the wars in which the United States has engaged, but none of them until the present moment left a lasting record of their experiences. This fact shows, the authors say, how undeveloped, disorderly and indifferent the veterinary profession of North America has been. The genesis of veterinary medicine in the United States falls into three epochs, sharply divided by great wars: (1) the Revolutionary War, which led to the development of a tremendous livestock industry and established the field for the present veterinary profession; (2) the Civil War period, during which an organization was established to plan disease control among the animals, and schools were founded to furnish the personnel; (3) the World War,



which for the first time exposed the weakness of the veterinary educational system and established a new era in American veterinary history. The Surgeon General of the army during this period took action to correct the veterinary educational system and private veterinary institutions succumbed one after another, leaving all veterinary instruction to publicly supported institutions. Although enormous losses had been sustained previously from animal plagues, it was not until 1884 that the Bureau of Animal Industry was founded and not until after the great war in 1917 that a veterinary service such as other nations had for more than a century was established in our own army. The authors pay tribute to the extremely valuable research that has been done by the Bureau of Animal Industry but do not undertake to include here those features of veterinary history. There are a few introductory pages on ancient veterinary history; indeed, they state that the birth of the veterinary art preceded that of human medicine, wavering, however, on whom to call the father of veterinary medicine. Many give this honorable title to Vegetius, who lived about 500 A. D. He was the first author of the Christian era to write a work devoted entirely to veterinary medicine, and his doctrines have become consecrated precepts in the veterinary profession. Among the illustrious characters of ancient veterinary history is one named Hippocrates, who should not be confused with Hippocrates the great physician, who lived eight centuries earlier. The authors add here a bibliography of fourteen references for readers especially interested in ancient history.

Much of these volumes is taken up with accounts of the veterinary service during the various wars of the United States. The general tone of the story, as told, does not reflect much credit for the way this country provided for its animals during these emergencies: it accentuates the fact that the United States has always been unprepared with regard to animals to be used to help carry on its wars. Some of these pages do not reflect credit on the veterinary profession itself. During the World War, the veterinarians became a part of the medical department of the army and were privileged to become commissioned officers, a status which they never before enjoyed in the armies of the United States.

This history is the outgrowth of a series of articles published in 1932, which included only the experiences of the senior author in the World War; later he decided to expand the manuscript to include the entire history of the military-veterinary services in the United States from the Revolution to the present time. At the close of the second volume they include a list of veterinary officers of the World War, those in the Veterinary Corps of the regular army in 1935, and a list of all veterinarians who have served in our armies since 1879. There are many interesting and instructive facts about veterinary history stated here and numerous interesting pictures, some not so closely related to the adjacent text. Probably as succeeding editions of the history appear, some improvements in the layout and some deletions and additions will be made.

*Vom Sinn der Sinne: Ein Beitrag zur Grundlegung der Psychologie.* Von Erwin Straus. Paper. Price, 12 marks. Pp. 314. Berlin: Julius Springer, 1935.

The reader who attempts to evaluate this book will find it necessary to examine it with reference to the "cultural science" movement in contemporary German psychology. For in line with that movement, a rationale which places great emphasis on epistemological issues is developed for "understanding" as opposed to "explanation" as the end of psychologic analysis. To gain the dignity of antiquity, the author meticulously traces the various steps by which modern psychology has in his opinion been derived from the seventeenth century teachings of Descartes. Of the several branches of the "cultural science" movement, Straus is probably most clearly identified with the existential school. The point of view of this school has been characterized on the positive side by a body of quasiphenomenological concepts and on the negative side by a lack of any distinctive methodology. The author attempts to minimize the lack of method by showing that pavlovian "conditioning" is but a special instance of cartesian philosophy, whose most faithful modern expression is the existential school. To document this position he quotes a passage from *Passions de l'âme* which

leaves little doubt that the general phenomenon of "conditioning" was recognized by Descartes. The scope of the book is broad, but its appeal is based chiefly on the theoretical treatment made of known facts rather than on the presentation of new ones.

*The Practitioners Library of Medicine and Surgery. Volume IX: Neurology and Psychiatry.* Supervising Editor: George Blumer, M.A., M.D., David P. Smith, Clinical Professor of Medicine, Yale University School of Medicine. Associate Editors: James C. Fox Jr., B.A., M.D., Associate Clinical Professor of Neurology, Yale University School of Medicine, and Clements C. Fry, B.S., M.D., Associate Professor of Psychiatry and Mental Hygiene, Yale University School of Medicine. Cloth. Price, \$10. Pp. 1,234, with illustrations. New York & London: D. Appleton-Century Company, Inc., 1936.

This volume in a series that has already become monumental is concerned with neurology and psychiatry. An attempt has been made to present the data on an etiologic basis. Most textbooks on neurology and psychiatry approach the subject from the anatomic point of view. Recent advances in biochemistry and particularly in psychology make textbooks in this field obsolete almost as soon as they are published. The editors have selected for this work many of the great names in modern American neurology and psychiatry and provide as well some contributions by authors from abroad. The book opens with two excellent chapters on psychopathology by Myerson, then discusses psychology, and presents special methods of examination and psychoanalysis. These matters occupy the first 150 pages. The rest of the book, to the extent of a total of 1,200 pages, is largely concerned with more material methods, such as the technic of cerebrospinal fluid examination, ventriculography, the diagnosis of infections involving the brain, the injury due to syphilis, the results of intoxications with poisons, the results of infectious diseases and trauma, electrical injuries and birth injuries. Then come the articles on visual changes, malformations and degenerations, the paroxysmal disorders, and finally some large chapters on psychoses. To each of the chapters there is appended a bibliography of current references. The volume is handsomely printed, like the previously published volumes, and there are numerous well chosen, instructive illustrations. If there is any particular lack in the work it lies in the inability of the author, because of the limitations of space, to do much in the way of presentation of cases which are typical and which no doubt constitute the most instructive available material. The size and scope of this volume must necessarily impress the reader with the vast accumulation of material in this field during the present generation.

*A Doctor's Odyssey: A Sentimental Record of Le Roy Crummer: Physician, Author, Bibliophile, Artist in Living, 1872-1934.* By A. Gaylord Beaman. With a word in memory by A. Edward Newton and numerous memoirs and appreciations. Cloth. Price, \$2.50. Pp. 340, with 21 illustrations. Baltimore: Johns Hopkins Press, 1935.

Had Le Roy Crummer not begun to collect old medical books in 1917 he would be remembered chiefly as a prominent practitioner of medicine, some would say the leading internist in Omaha. This prominence was not accidental; he was well qualified to succeed. He was the son of an able, cultured physician, had had a good education in this country and in Europe, was industrious, showed interest in his patients as human beings and not alone as cases, and had an attractive personality and the bearing of a gentleman. He was popular as a teacher. At society meetings or at consultations he was helpful because of his store of knowledge, his skill in diagnosis, his sound advice. With colleagues as with patients he made friendships through his camaraderie. Even his frank and sometimes caustic comments, or his sarcastic and epigrammatic criticisms, were robbed of much of the sting by his sense of humor and his evident friendliness. But in 1917 he began to collect books. Soon he was an international figure. He was fortunate in having the means with which to buy rare or expensive volumes, fortunate in having the sage advice and enthusiastic encouragement of a wife who was herself a collector in the field of English literature. He was fortunate also in having a keen sense of values, in being a shrewd purchaser who was fascinated by the game. To him a book was worth owning not simply because it was old. There must be other reasons—paper, typography, binding, illustrations, state of preservation. The

author or the book must mean something in the history of medical development. So he gathered together a library which became famous and at his death enriched several other libraries, notably that of the University of Michigan. As a collector he was especially known for his assembling of fugitive anatomic sheets and for his discovery and publication of a hitherto overlooked Heberden manuscript, as well as for his collection of Harvey and Jenner items. In his later years this avocation became his major pursuit; it was his joy. The frequent trips, carefully planned and joyously anticipated, brought Dr. and Mrs. Crummer into intimate contact with book dealers and bibliophiles in this country and in Europe. Many cherished friendships resulted from the wanderings of this much traveled medical Odysseus. All the wanderings are shown in this volume. It is replete with facts and personal incidents concerning Dr. Crummer from his early life to the last sad years of suffering in California. There are many tributes and many excerpts from letters. All this will be read with interest by the friends who mourned his loss at the age of 62 when joy in his books seemed to be at its peak and his usefulness to medical history had not yet reached its full fruition. The book is a fine memorial to a superior physician, a renowned collector and an attractive personality. Greater unity and effectiveness would have resulted were there less repetition and fewer contributors, or had Dr. Beaman assumed more the function of editor than compiler.

**Précis de physique médicale.** Par André Strohl, professeur de physique médicale à la Faculté de médecine de Paris. Cloth. Price, 70 francs. Pp. 723, with 320 illustrations. Paris: Masson & Cie, 1935.

This book covers a wide range of physical factors and aspects in normal physiologic processes, disease, diagnosis and therapy. Animal calorimetry and the physical chemistry of solutions are presented too simply in view of present knowledge and methods. The gross mechanics of muscle action, locomotion, respiration, blood pressure and circulation are presented satisfactorily for the medical student. Acoustics, optics and electrophysiology are presented in more than usual detail. Biologic reactions to light radiations are considered briefly and generally, but the biologic action and therapeutic application of ultraviolet radiations, x-rays and radon are given in considerable detail. The book may be considered a good elementary presentation of physics as applied to medicine rather than a fundamental textbook on biophysics or general physiology.

**For and Against Doctors: An Anthology.** Compiled by Robert Hutchinson and G. M. Wauchope. Cloth. Price, \$2. Pp. 168. Baltimore: William Wood & Company, 1935.

Since the earliest times, writers have not hesitated to express their personal opinions of the medical profession. In these writings, doctors have been pitilessly abused and extravagantly praised. The British authors have apparently collected from many sources proverbs and writings about doctors, and they are here offered in a handsome little book nicely printed for those who wish to have easily available these classical quotations. It is not of course strange to observe that the same ideas have been reported from century to century in different words. For example: "A physician who professes to cure for nothing is often worth nothing," "The most tragic thing in the world is a sick doctor," and "Doctors, when the cause of a disease is discovered, think that the cure is discovered." The last quotation is from Cicero around 60 B. C. and is just as true now as it was then.

**Introduction to the Microtechnique of Inorganic Qualitative Analysis.** By A. A. Benedetti-Pichler, Dr. Tech. Sc., Assistant Professor of Chemistry, Washington Square College, New York University, and W. F. Spikes, M.S., Washington Square College, New York University. Cloth. Price, \$3. Pp. 180, with 76 illustrations. Douglaston, N. Y.: Microchemical Service, 1935.

This book should be of great use to workers in toxicologic and other biologic laboratories where small quantities of materials must be analyzed. The fundamental principles and the underlying methods are intelligently presented and a good many analytic procedures are described. The book is profusely illustrated with mechanical drawings, which greatly enhance its worth. It should lead to valuable applications of the micro-analytic methods to biologic problems.

**Experimentelle undersøgelser over bartonellaanæmi hos rotter og mus.** Af Gunnar Alsted. With an English summary. [Experimental Investigations into Bartonella Anæmia in Rats and Mice.] Paper. Pp. 144, with 19 illustrations. Copenhagen: Levin & Munksgaard, 1935.

In this dissertation the author presents the results of his experiments on Bartonella infection or anemia in white rats and other animals. Bartonella organisms are minute rod-shaped, intra-erythrocytic bodies, the precise nature of which has not been established definitely. In rats latent infection is exceedingly common and when the spleen is removed a severe anemia of the macrocytic type may develop. The rôle of the spleen in preventing Bartonella anemia in rats is perhaps its best established function. Alsted made experimental studies on various aspects of Bartonella infection of rats and other animals. His experiments on treatment of Bartonella anemia in animals with preparations of liver did not yield any encouraging results. The main details of the results are recapitulated at the end of the thesis in an English summary. It may be of interest to recall that the Peruvian student Carrion died in 1886 from Oroya fever (Carrion's disease) two weeks after he had inoculated himself with material from a nodule of verruca peruviana, and that some years later Barton discovered a form of the organism named after him in Oroya fever.

**You Must Eat Meat: Fancies, Follies and Facts About Meat.** By Max Ernest Jutte, M.D. Cloth. Price, \$2. Pp. 164. New York: G. P. Putnam's Sons, 1936.

The author believes that most chronic diseases, such as colitis, asthma, gout and stomach disorders, are due largely to excessive fermentation of starches and sugars and that meat counteracts and stops excessive fermentation. He therefore presents a good deal of material in favor of this point of view, which, incidentally, has no more acceptance than the points of view of the vegetarians, which he attacks. One of the chapters is devoted to the so-called Salisbury meat diet. The volume is peculiarly printed with a thin column on a wide sheet, causing one to feel that it is perhaps the result of a pick-up from some periodical. While the book contains much common sense, it is obviously written by a prejudiced observer who is ready to accept any evidence that supports his point of view.

**Opuscula selecta Neerlandicorum de arte medica.** Fasciculus tertius-declmus quem curatores miscellaneorum quae vocantur Nederlandsch Tijdschrift voor Geneeskunde collegerunt et ediderunt Amstelodami Sumptibus Societatis. Consultationes medicae. [Selected Dutch Writings on Medical Art, No. 13. Medical Consultations.] Cloth. Pp. 307, with illustrations. Amsterdam, 1935.

This volume in the notable series of historical publications sponsored by the *Nederlandsch Tijdschrift voor Geneeskunde* contains selected letters from the correspondence of fourteen Netherlandish physicians and scientists. The dates of the letters run from June 20, 1550, to Jan. 20, 1870. Among those represented may be mentioned Vesalius, Guy Patin, Descartes, Boerhaave and Camper. As a rule the letters in Latin are accompanied by Dutch translations. Of lively interest are the nineteen portraits of writers. M. A. van Andel writes an instructive introduction in Dutch with a French translation. There are brief biographic notes, mostly in English. The volume is a valuable addition to the literature of medical history.

**The Hair and Scalp: A Clinical Study (With a Chapter on Hirsuties).** By Agnes Savill, M.A., M.D., M.R.C.P.L., Consulting Physician to Fitzroy Square Skin Hospital, London. Cloth. Price, \$5. Pp. 288, with 55 illustrations. Baltimore: William Wood & Company, 1935.

The frontispiece of this excellent study is a reproduction of a page of a book published in 1550 telling of an interesting condition known as "alopecia." Dr. Savill discusses the structure and physiology of the hair, the occurrence of gray hair, cutting and singeing, brushing and combing, elastic properties and common disorders. She then takes up the various forms of baldness, infection and parasitism, and concludes with a chapter on hirsuties. The book provides several pages of useful prescriptions. The volume is a standard one and will be found a most useful reference book by all physicians especially concerned with the subject. Among the most recent topics discussed is the use of pituitary in alopecia and in psoriasis. Here the author merely mentions the method as being worthy of trial without any conclusion as to its merit.

**Nahrungsmitteltabelle zur Aufstellung und Berechnung von Diätverordnungen für Krankenhaus, Sanatorium und Praxis.** Von Dr. Hermann Schall, leitender Arzt des Kindersanatoriums und des Erholungsheims Westend für Erwachsene, Königsfeld (Badischer Schwarzwald). Eleventh edition. Boards. Price, 5.40 marks. Pp. 127. Leipzig: Curt Kabitzsch, 1935.

This is a reprint of a standard German textbook which makes available data regarding percentage composition of foods from the point of view of protein, carbohydrate, fat, minerals, salts and vitamins. Such tables are invaluable to the scientific dietitian.

**Diet and Die.** By Carl Malmberg. Cloth. Price, \$1.50. Pp. 149. New York: Hillman-Carl, Inc., 1935.

In this small book the author tells much about current fallacies promoted by such writers as William Howard Hay, Benjamin Hauser and the other peculiar dietitians who have recently invaded the field of diet. He discusses as well the current reducing diets, such as the banana and skim milk diet, the Hollywood diet and the milk farms. The book is nicely written and quite authoritative. The title would seem to have been unfortunately chosen, since it is far more sensational than the content. The book may well be recommended by all physicians to patients who are interested in being disillusioned relative to the fallacies that recur again and again in the field of nutrition.

## Bureau of Legal Medicine and Legislation

### MEDICOLEGAL ABSTRACTS

**Medical Practice Acts: Faith Healing Exempted from New Jersey Act.**—The defendant, Bascom W. Maxwell, was convicted of violating the medical practice act of New Jersey and sought a reversal of the conviction in the supreme court of that state.

According to the evidence, Maxwell sold a book entitled "Eternal Wisdom and Health." He maintained a store in Atlantic City with seats arranged in rows, and spoke of the infinite spiritual forces which illuminate the body with the principles of truth, love and light. He preached the triumph of the mind over the ills of the body and the power of the will to drive out disease. He used neither drugs nor material remedies. He told his patients to sit erect, feet firmly on the floor and will themselves to feel the forces of which he talked. Obviously, said the supreme court of New Jersey, that which the defendant did constituted no violation of the medical practice act, section 127-36 of which provides that the provisions of the act shall not apply "to the ministrations to, or treatment of, the sick or suffering by prayer or spiritual means, whether gratuitously or for compensation, and without the use of any drug or material remedy." The philosophy which the defendant sought to teach, the court said, was the power of the mind over the ills of the body. He told those who came to him how to sit and think, and gave them assurances of the cure of every ailment by such means. Such advice, in the opinion of the court, clearly came within the exception noted above. The conviction was therefore set aside.—*State Board of Medical Examiners v. Maxwell (N. J.), 181 A. 694.*

**Workmen's Compensation Acts: Hernial Sac Not a "Hernia."**—The workman, in the course of his employment, was pulling planks from a pile of lumber. He slipped, twisted his body, and immediately suffered severe stabbing pains in and about the middle of his abdomen, which recurred from time to time. About eight days later he discovered a small protrusion on his abdominal wall and reported that fact to his employer. A physician, supplied by the employer, diagnosed the condition as epigastric hernia and an operation was performed. The hernial sac was found to be bound to the surrounding tissue by fibrous adhesions, which cut almost like cartilage. The sac was densely adherent to these tissues, indicating to the physician that the sac had existed for some time.

The Idaho workmen's compensation act, section 43-1116, requires, as one of the prerequisites to an award of compensa-

tion in all cases of hernia, "3. That the hernia did not exist in any degree prior to the injury by accident for which compensation is claimed." In the present case, the industrial accident board denied compensation, on the ground that the worker's hernia existed to some degree prior to the injury by accident, even though it found that the hernial sac contained none of the abdominal contents prior to the accident. The district court, Shoshone County, reversed the order of the commission denying compensation, and the employer and his insurance company appealed to the Supreme Court of Idaho.

The only question presented, said the Supreme Court of Idaho, is whether or not the worker had the hernia to some degree prior to the time he sustained his injury. The record discloses that prior to the accident the worker was strong and healthy and had been engaged for a long period of time in hard manual work. He had never noticed or suffered pain or inconvenience of any character because of the existence of the small sac. Referring to a similar question in *Stoddard v. Mason's Blue Link Stores, Inc. (Idaho), 45 P. (2d) 597*, it was said:

In all the definitions of "hernia" that have been called to the attention of the court or which have been found "hernia" is described as being the protrusion of some organ or some tissue from its normal situation through an accidental or natural opening in the walls of the cavity within which it is contained. In no instance does it appear that the perforation or aperture, either natural or accidental, and without protrusion of some organ or tissue, is defined as a "hernia."

The word "organ" or "tissue" as used in the foregoing definition, said the court in the present case, does not include a hernial sac but rather has reference to some organ or tissue which protrudes through the hernial opening into the hernial sac. It follows therefore as a matter of law that the worker did not have a hernia in any degree prior to the accident. The Supreme Court accordingly entered an award of compensation in favor of the worker.—*Newman v. Rogers Lumber Co. (Idaho), 52 P. (2d) 136.*

**Osteopathy: Revocation of License for Deceitful Advertising.**—A license to practice osteopathy in California may be revoked for unprofessional conduct, defined to include:

All advertising of medical business which is intended or has a tendency to deceive the public or impose upon credulous or ignorant persons, and so be harmful or injurious to public morals or safety.

The board of osteopathic examiners revoked Gustason's license for a violation of the foregoing provision, finding, according to the record, that he had in separate listings in the telephone directory of the city of Los Angeles advertised and held himself out to the public as a specialist in the following services, illnesses, and diseases:

Accident, illness, health service, blood diseases, cancer, eye, ear, genitourinary, goiter, hemorrhoid, hernia, lung, men's diseases, nervous diseases, nose, plastic surgery, general surgery, skin diseases, syphilis, throat, tonsil, women's diseases, x-ray and clinical services, blood pressure, bone, chest, and children's diseases, epilepsy, gland, heart, kidney diseases, and practically everything else known to the science of medicine and surgery.

From the order of revocation, Gustason appealed to the superior court, Los Angeles county, which entered judgment denying a petition for a review. Gustason then appealed to the district court of appeal, second district, division 1, California.

In affirming the judgment of the superior court, upholding the revocation order of the board of osteopathic examiners, the district court adopted the following opinion of the trial judge:

"No postgraduate work was ever done by the petitioner, nor has he taken any special training in any hospital or medical college as to any of the branches of medicine and surgery in which he styled himself as a specialist. Under examination by members of the board he was unable to name a standard work on some of the various branches of medicine in which he represented himself to be an expert and it further appears that at the date of the hearing he had only performed two operations over a period of five years.

"The claims of the petitioner as reflected in his listings in the 'Buyers' Guide' were manifestly extravagant and false and inserted for the purpose of attracting to his office credulous and ignorant people who knew nothing of petitioner's professional background and experience. His advertisements in the 'Buyers' Guide' indicated that he was equally ready to treat as

a specialist such unrelated diseases as syphilis and cancer—tuberculosis and women's diseases—hemorrhoids and nerves—ear, eye, nose and throat and epilepsy—stomach diseases and skin diseases; and his surgical talents (as a specialist) were advertised to cover so wide a field as goiter, facial plastic surgery, bone surgery, ocular plastic surgery, and others. And in addition to all of the foregoing, he claimed to be an x-ray specialist.

"Eminent doctors, both of the allopathic and homeopathic schools, testified before the board that no doctor in the ordinary span of life could specialize in the many diseases of the human body and mind enumerated in petitioner's listings. . . . Is the medical profession helpless to protect its good name and the public interest against the palpably false claims of such a charlatan? Is it not against the public safety to permit a man utterly without specialized training, postgraduate work, or research experience to hold himself out as a specialist in bone surgery, when upon his own admission he has not performed more than two operations in five years? And is it not dangerous to the public welfare for such a man to treat as a specialist such a dread disease as syphilis, when he shows himself so ignorant (as the record indicates) as not to know the name of the manufacturer of the specific medicine commonly employed in its arrest and cure? Unless we are prepared to concede that the state has no interest to protect the health and lives of its citizenry and is ready to surrender its power of supervision over the practice of the learned professions we must conclude that upon the record as made, it was not only within the power of the Board of Osteopathic Examiners to discipline the petitioner but that it would have been derelict in its duty if it had failed to take official cognizance of his unprofessional conduct."—*Gustason v. Board of Osteopathic Examiners (Calif.)*, 51 P. (2d) 1106.

**Malpractice: Delay in Making Roentgenologic Examination of Leg Injury.**—The plaintiff, a boy aged 16 years, fell on the floor of his father's store as a result, he said, "of his knee giving way." He went to bed and two days later consulted the defendant, a physician. The knee was then swollen and inflamed. The defendant, as a part of his examination, measured the length of the boy's legs, and found them of equal length. After being informed that another physician had treated the boy for rheumatism for about a year, he made a diagnosis of arthritis of the knee, ordered his patient to bed, and prescribed a course of treatment for arthritis. Ultimately, the swelling and inflammation of the knee yielded to treatment. After about six or eight weeks of treatment, the defendant discovered that there was not full movement of the hip and ordered roentgenograms taken. According to a witness for the patient, in a suit for malpractice that ensued, these roentgenograms disclosed a fracture of the femur. The defendant and four other physicians, however, interpreted the roentgenograms as disclosing a separation of the epiphysis of the femur. The trial court directed a verdict for the physician, and the patient appealed to the Supreme Court of Pennsylvania.

The patient argued that a shortening of one of his legs was the result of the fall, and, although he complained of pain in his hip, the defendant did not take a roentgenogram until eight weeks after the fall. This delay, he contended, constituted negligence and resulted in his permanent injury. Medical testimony on behalf of the defendant was to the effect that the slipping of the epiphysis was due to infection, not trauma, and that the defendant's diagnosis of arthritis was a correct one; that there was nothing to put him on notice at first that there was anything wrong with the hip, since the measurements made at the time of the examination showed no disparity in the length of the legs, and that the pain complained of in the hip could have resulted from the condition of the knee; that a slipping of the epiphysis is very difficult to detect and diagnose, and that, under all the circumstances in the case, what the defendant did was proper. It does not constitute negligence or unskilful treatment, said the Supreme Court of Pennsylvania, if a physician does not immediately employ roentgenograms as an aid in diagnosing a patient's condition. Whether this or another method of inquiry shall be resorted to is a matter of judgment, and a failure to use the one or the other cannot be

said to be negligence. At most, all that can be said is that the defendant in the present case made a mistake in diagnosis where the symptoms were obscure. For this there is no liability. Where competent medical authority is divided, a physician will not be held responsible if, in the exercise of his judgment, he follows a course of treatment advocated by a considerable number of physicians in good standing in his community.

The judgment in favor of the physician was accordingly affirmed.—*Duckworth v. Bennett (Pa.)*, 181 A. 558.

**Accident Insurance: Epilepsy Due to Trauma Antedating Issuance of Policy.**—A policy issued by the defendant insurance company, Feb. 18, 1928, provided certain benefits on "proof . . . that the insured has, while said policy . . . [is] in full force . . . become totally and permanently disabled, as the result of bodily injury or disease occurring and originating after the issuance of said policy." The insured brought suit on the policy alleging that he had become totally and permanently disabled because of epileptic convulsions. The trial court directed a verdict for the insurance company and the insured appealed to the Supreme Court of South Carolina.

In 1914, the insured was struck on the head by a timber and sustained a depressed fracture of the frontal bone. In August 1928 he began to have epileptic convulsions and was operated on to relieve his condition, but he continued to have convulsions, averaging as many as three a week. At the trial the physician who had attended him since 1928 testified that he diagnosed the insured's condition as traumatic epilepsy, caused by an injury to the brain, and that in his opinion the convulsions were directly attributable to the injury sustained in 1914. Another physician, called by the insurance company, testified to the same effect and further stated that epileptic convulsions may occur any time from the date of an injury for a period of twenty years. From a consideration of the medical testimony, said the Supreme Court, the conclusion is inescapable that the epilepsy resulted from the injury to the head sustained by the insured in 1914, many years prior to the issuance of the policy, and was not, therefore, within the coverage of the policy. The Supreme Court accordingly affirmed the judgment in favor of the insurance company.—*Nalley v. Metropolitan Life Ins. Co. (S. C.)*, 182 S. E. 301.

## Society Proceedings

### COMING MEETINGS

- American Association for the Study of Goiter, Chicago, June 8-10. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Corresponding Secretary.
- American Association for the Study of Neoplastic Diseases, Baltimore, June 11-13. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.
- American Dermatological Association, Swampscott, Mass., June 4-6. Dr. Fred D. Weidman, Medical Laboratories, University of Pennsylvania, Philadelphia, Secretary.
- American Neurological Association, Atlantic City, N. J., June 1-3. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.
- American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. J. Milton Griscom, 255 South 17th St., Philadelphia, Secretary.
- American Pediatric Society, Bolton Landing, N. Y., June 11-13. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.
- American Physiotherapy Association, Los Angeles, June 28-July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.
- Conference of State and Provincial Health Authorities of North America, Vancouver, B. C., June 22-24. Dr. A. J. Chesley, State Department of Health, St. Paul, Minn., Secretary.
- Maine Medical Association, Rangeley, June 21-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.
- Massachusetts Medical Society, Springfield, June 8-10. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.
- Medical Library Association, St. Paul, June 22-24. Miss Janet Doe, 2 E. 103d St., New York, Secretary.
- Montana Medical Association of Billings, July 8-9. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.
- New Jersey Medical Society of Atlantic City, June 2-4. Dr. J. B. Morrison, 66 Milford Ave., Newark, Secretary.
- North Pacific Pediatric Society, Victoria, B. C., June 24-25. Dr. M. L. Bridgeman, 1020 S. W. Taylor St., Portland, Ore., Secretary.
- Pacific Northwest Medical Association, Portland, Ore., July 8-11. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.
- Rhode Island Medical Society, Providence, June 3-4. Dr. J. W. Leech, 167 Angell St., Providence, Secretary.
- West Virginia State Medical Association, Fairmont, June 8-10. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

## Current Medical Literature

### AMERICAN

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Titles marked with an asterisk (\*) are abstracted below.

#### American Heart Journal, St. Louis

11:255-384 (March) 1936

- Compensation and Failure of Right Ventricle. M. H. Fineberg and C. J. Wiggers, Cleveland.—p. 255.
- Extrasystoles of Clinical Significance. E. P. Boas and H. Levy, New York.—p. 264.
- Energy Metabolism of Heart in Failure and Influence of Drugs on It. H. C. Peters and M. B. Visscher, Chicago.—p. 273.
- \*Radiologic Study of Pulmonary Artery, with Especial Reference to Main Branches. J. B. Schwedel, New York, and B. S. Epstein, Brooklyn.—p. 292.
- Observations on Mechanism of Dying Heart in Patients with Adams-Stokes Syndrome Due to Standstill of Ventricles. A. Jezer, A. M. Master and S. P. Schwartz, New York.—p. 303.
- \*Bacterial Endocarditis, with Especial Reference to Cardiac Irregularities: Clinical and Pathologic Study of One Hundred and Ninety-One Cases. M. S. Segal, Boston.—p. 309.
- Four Lead Electrocardiogram in Two Hundred Normal Men and Women. R. A. Shipley and W. R. Hallaran, Cleveland.—p. 325.
- Initial Ventricular Deflection in Electrocardiograms of Normal Subjects. C. E. Kossmann, Margery Shearer and M. Texon, New York.—p. 346.
- Clinical Diagnosis of Tricuspid Stenosis: Report of Case Complicated by Paroxysmal Nodal Tachycardia and Auriculoventricular Dissociation. R. D. Friedlander and W. J. Kerr, San Francisco.—p. 357.

**Radiologic Study of Pulmonary Artery.**—Schwedel and Epstein emphasize the fact that it is possible to visualize roentgenologically not only the pulmonary artery but also its main branches. The shadow of the main trunk and left pulmonary artery can usually be seen in properly exposed films taken in the left oblique position or fluoroscopically. Obstruction anywhere in the pulmonary circulation (whether functional, as in congestive failure, or organic) will lead to dilatation of the pulmonary artery and its major and lesser branches. The size of the pulmonary artery and its lesser branches is of value in recognizing congenital lesions of the heart or pulmonary arterial system in the absence of clinical signs. Radioscopic examination can supply information not obtainable by other clinical means.

**Bacterial Endocarditis and Cardiac Irregularities.**—Segal points out that it is generally agreed that rhythmic disturbances are rare in the course of active bacterial endocarditis. With the increase in cases of bacterial endocarditis there have appeared more specific references to the occurrence of cardiac irregularities in the course of the disease. The literature is reviewed with reference to the cardiac irregularities in the course of bacterial endocarditis, rheumatic heart disease and rheumatic fever. A study of 192 cases of bacterial endocarditis, with electrocardiographic studies in sixty-seven, revealed four cases of auricular fibrillation, two of auricular flutter, nine of heart block, two of prolonged QRS interval, one of prolonged QT interval, one of left bundle-branch block, nine of gallop rhythm, fifteen of extrasystoles, twenty-one of left axis deviation and six of right axis deviation. Prolongation of the PR interval occurs more commonly in the cases of bacterial endocarditis with involvement of the aortic valves alone, or in combination, than in cases of mitral involvement. Disturbances in conduction time, particularly intraventricular block and bundle-branch block, are far less common in bacterial endocarditis than in rheumatic heart disease. The same is true of gallop rhythm and premature beats. A statistical study, including all other reported cases, leads one to conclude that auricular fibrillation and auricular flutter are rare in the course of bacterial endocarditis. The occurrence of auricular fibrillation and flutter in the course of bacterial endocarditis appears to be related to the functional integrity of the myocardium rather than to any grade of mitral stenosis in itself.

#### American Journal of Anatomy, Philadelphia

58:259-530 (March 15) 1936

- Studies in Wave Mechanics of Muscle: I. Vibratory Motor Nerve Ending and Related Radiation Patterns of Muscular Cross Striations. E. J. Carey, Milwaukee.—p. 259.
- Erythrocyte Studies in the Mammalian Fetus and New-Born: Erythrocyte Counts, Hemoglobin and Volume of Packed Red Corpuscles, Mean Corpuscular Volume, Diameter and Hemoglobin Content, and Proportion of Immature Red Cells in Blood of Fetuses and New-Born of Pig, Rabbit, Rat, Cat, Dog and Man. M. M. Wintrobe and H. B. Shumacker Jr., Baltimore.—p. 313.
- Weights and Linear Measurements of the Adult Cat. H. B. Latimer, Lawrence-Kansas City, Kan.—p. 329.
- Arterial Pattern of Tunica Mucosa of Uterus in Macacus Rhesus. G. H. Daron.—p. 349.
- Permeability of Hypophysis and Hypothalamus to Vital Dyes, with Study of Hypophyseal Vascular Supply. G. B. Wislocki and L. S. King, Boston.—p. 421.
- Observations on Biochemistry of Genital Tract of Female Macaque, Particularly During Menstrual Cycle. H. B. van Dyke and G. Ch'en, Peiping, China.—p. 473.
- Arteries of the Chimpanzee (Pan Spec.): I. Aortic Arch; II. Arteries of Upper Extremity; III. Descending Aorta; IV. Arteries of Lower Extremity. Evelyn M. Glidden and C. F. De Garis, Baltimore.—p. 501.

#### American Journal of Clinical Pathology, Baltimore

6:99-204 (March) 1936

- Pathologic Anatomy of Splenomegaly. P. Klemperer, New York.—p. 99.
- The Bleeding Time. L. M. Tocantins, Philadelphia.—p. 160.
- Serodiagnosis of Malignant Tumors. I. Davidsohn, Chicago.—p. 172.
- \*Bone Marrow Studies in Glandular Fever (Infectious Mononucleosis). W. Freeman, Boston.—p. 185.
- Method of Temporarily Preserving Fresh Frozen Sections Stained with Polychrome Methylen Blue. J. W. Kernohan, Rochester, Minn.—p. 195.
- New Stain for Connective Tissue, Mucin and Allied Substances. Elena de Galantha, Rochester, Minn.—p. 196.

**Bone Marrow Studies in Glandular Fever.**—Freeman reports two cases. One of the patients had glandular fever. The examination of her sternal bone marrow revealed the marrow spaces filled with typical immature lymphocytes found in the blood in this disease. The illness of the second patient began in a manner almost identical with that of the first and it remained the same for thirteen days. The sternal bone marrow observations were substantially the same as those in the first case. On the fourteenth day the patient suddenly developed new symptoms which made it necessary to change the diagnosis to acute lymphatic leukemia, which proved fatal. In view of these facts there is some basis for stating that the second patient was ill first with glandular fever and later with acute lymphatic leukemia.

#### American Journal of Ophthalmology, St. Louis

19:195-286 (March) 1936

- \*Idiopathic Flat Detachment of Macula. F. B. Walsh and Louise I. Sloan, Baltimore.—p. 195.
- Genesis of Glaucoma: Improved Method Based on Slit Lamp Microscopy of Angle of Anterior Chamber. O. Barkan, S. F. Boyle and S. Maister, San Francisco.—p. 209.
- \*Hereditary Macular Degeneration. R. I. Lloyd, Brooklyn.—p. 216.
- New and Practical Charts and Lighting for Testing Visual Acuity and Locating Astigmatic Axis: Simple, Standardized and Complying with Modern Requirements. M. H. Post, St. Louis.—p. 222.
- Observations on Epithelial Cell Inclusions of Early Uncomplicated Trachoma. Ida A. Bengtson and L. S. Rolufs, Washington, D. C.—p. 229.
- Use of Variable Illumination in Correction of Presbyopic Eye. C. E. Ferree and G. Rand, Baltimore.—p. 238.
- Photography of Eye for Case Record Purposes. W. C. Bane, Denver.—p. 241.

**Idiopathic Flat Detachment of Macula.**—Walsh and Sloan cite three cases of a peculiar macular disorder which they observed during the past year and which represent a definite clinical entity. The essential subjective symptoms of the condition are unilateral dimness of vision with a positive scotoma, metamorphopsia and micropsia. Examination of the eyes with a hand ophthalmoscope shows an ill defined macular change suggesting an early choroiditis. Examination with the binocular ophthalmoscope, however, shows a definite swelling in the macular region of from 3 to 4 disk diameters in area, with a few small yellowish spots in the retina. Otherwise ophthalmoscopic examination is negative. There is an acquired transient hyperopia. Perimetric examination shows a central scotoma that may be absolute for small colored test objects. The disease tends to be self limited, and within a few weeks

the macular protrusion commences to flatten. The yellowish spots, however, are increased in number at this time. In from two to four months the macular protrusion and the acquired hyperopia disappear and the central scotoma disappears or is greatly reduced. The yellowish spots disappear. Micropsia and change in the light sense persist. There is a marked tendency to relapses, which are of lessened severity. The etiology is not definitely known. It has been suggested that it is due to a toxic process, probably septic in origin, that it might be secondary to disease of the accessory nasal sinuses, or that it might be due to a circulatory disturbance of the retinal vessels, either angioneurotic or allergic in origin. In the authors' patients although a few scattered foci of infection were discovered and treated, a definite cause was not established. They believe that the nature of the swelling at the posterior pole of the eye is due to a localized separation of the retina rather than to a localized edema of the retina and adjacent choroid. The following observations in their cases support this view: 1. The retinal vessels came forward sharply at the margin of the affected area and retained their superficial position over the entire elevated area. 2. Reduplication of the beam of the Friedenwald instrument was observed in two cases. This proved the presence of two reflecting surfaces separated by an optically clear space. The anterior surface, in their opinion, was retina and the posterior surface was pigment layer. 3. The temporary hyperopia decreased as the macular swelling diminished; consequently the perceptive elements must have been displaced forward. A tentative diagnosis of idiopathic flat detachment of the macula is readily made by consideration of the symptoms. The diagnosis can be made with finality by using a binocular ophthalmoscope and observing the progress of the case. Circumscribed detachment of the retina due to tumor, central choroiditis of the usual type, retrobulbar neuritis, actinic retinitis and syphilitic central recurrent retinitis as described by von Graefe and Weintraub must be excluded.

**Hereditary Macular Degeneration.**—Lloyd divides the fundus pictures of hereditary macular degeneration into three general types: those with a number of soft, white spots or dots throughout the periphery or about the macula, the severe cases with early pigment changes in the macula itself and poor vision and those that simulate partial coloboma of the choroid. These categories include amaurotic family idiocy. The fundus characteristics are very similar for cases in an individual family and this is true also of the age at which the changes appear. The milder form of macular degenerations of the first type exhibits a number of large, white or yellowish white spots about the macular area, the macula itself escaping until later in life. In young persons these are soft, round, white spots but in older patients they have the appearance of rain fallen on dust. In young persons the vision is always good but in the older patients some loss of visual acuity has usually been incurred. A second form of the first type is also characterized by white spots, but they are much finer and much more numerous. If the condition does not progress, the macula often escapes entirely, but in progressive cases it is finally affected. The second general group of macular degenerations is marked by changes beginning in the macula itself. Fine black pigment is deposited there, resembling fine grains of snuff. Vision fails early, and in the typical cases there is the effect of a central scotoma. Progress of the disease takes the form of a tapetoretinal degeneration, exposing the choroidal vessels, which later show the changes described as sclerosis of the choroidal vessels. The earlier the changes begin, the more severe the condition is likely to be, and this applies not only to the vision but to associated cerebral changes as well. This seems to be true of all hereditary ailments: the earlier its appearance, the more severe the disease is apt to be. The third form of hereditary macular degeneration resembles a partial coloboma of the choroid in the macular area. The range of vision is from very poor to even normal vision in one eye and fair vision in the other. Lesions that appear to resemble partial coloboma of the choroid might be considered lesser grades of typical colobomas of the choroid, which are sometimes familial. Senile and presenile cases, which were formerly considered separate entities, are now rated as delayed manifestations of hereditary influences and are usually less severe than those that appear earlier.

## American Journal of Surgery, New York

32: 1-194 (April) 1936

- Unilateral and Bilateral Hernia: Comparative Study of Postoperative Complications and Factors Concerned. C. W. Mayo and R. S. Hardwick, Rochester, Minn.—p. 4.  
Vasectomy for Prevention of Epididymitis in Prostatic Surgery: Report of Two Hundred and Eight Cases. B. S. Abeshouse, Baltimore.—p. 8.  
\*Experimental Studies of Bacterial Cholecystitis. H. G. Aronsohn, Chicago.—p. 18.  
Rotary Dislocation of Atlas on Axis. J. O. Rankin, Wheeling, W. Va.—p. 27.  
Sciatic Neuralgia: Controlled by Intraspinal (Subarachnoid) Injections of Ethyl Alcohol. C. W. Goff, Hartford, Conn.—p. 37.  
\*Intraperitoneal Use of Amniotic Fluid to Promote Smoother Postoperative Convalescence. J. R. Gelfert, New York.—p. 40.  
Treatment of Sprains by Interligamentary Injection of Novocain. R. Leriche, Strasbourg, France, and G. Arnulf, Lyons, France.—p. 45.  
Fascia Lata Repair of Sliding Hernias. A. H. Jacon, Brooklyn.—p. 48.  
Cutting Prethyroid Muscles for Exposure in Thyroidectomy. H. M. Clute, Boston.—p. 51.  
Functions of Mediotarsal Joint: Their Disturbance Cause of Flatfoot. J. J. Nutt, New York.—p. 53.  
Substernal Thyroid. R. F. Sharer, Sayre, Pa.—p. 56.  
Evisceration and Avulsion of Abdominal Wounds. S. T. Glasser, New York.—p. 63.  
Subperitoneal Decortication in Gallbladder Disease. D. P. MacGuire, New York.—p. 77.  
Treatment of Acute Head Injuries. J. V. Reed, Indianapolis.—p. 79.  
Diagnosis and Treatment of Ectopic (Tubal) Pregnancy. W. M. Johnston, Akron, Ohio.—p. 84.  
Diagnosis and Treatment of Cancer of Pelvic Colon and Rectum. J. W. Thompson and H. W. Soper, St. Louis.—p. 90.  
Repair of Certain Type of Hernia: Hernial Sac Used as Suture Material. C. L. Davidson, Jamaica, N. Y.—p. 96.  
Epistomy Under Local Anesthesia. S. Vernon, Willimantic, Conn.—p. 100.  
Peritoneal Sutures in Narath and Schönbauer's Modification of Talma's Operation. G. Zechel, Chicago.—p. 101.  
Podalic Version. S. S. Rosenfeld, New York.—p. 103.

**Experimental Studies of Bacterial Cholecystitis.**—In summarizing his experimental results, Aronsohn concludes that there is little tendency for an acute bacterial infection of the wall of the gallbladder to result from the contents of that organ. Only *Streptococcus haemolyticus* gave a positive reaction, and this only in one of the four strains used. Since traumatization or extension from an adjacent pathologic process can be definitely ruled out as a cause for this change, he deduces that the organism or its toxins present in the bile reached the serosal layer of the wall by traversing the mucosal and muscular layers without causing any changes in these. None of the other organisms injected, although present in the bile in overwhelming numbers, caused any change in the wall of the gallbladder. The experimental results partly confirm and partly contradict those reported in the literature. Bacterial infection of the wall of the gallbladder was found to occur less frequently than recorded by other authors. The diverse results obtained with different strains of the streptococcus concur with the observations of Rosenow and of Magner and Hutcheson, who stressed the varying activity within this group on the basis of differences in virulence. Magner and Hutcheson divided the streptococci into two chief groups, which they classified as typical and atypical. The negative results that the author obtained using *Bacillus coli* stand in direct disagreement both with the clinical data reported by Gilbert and with the experimental work done with this organism by Italia. However, the fact that *Staphylococcus aureus* and *albus*, *Streptococcus viridans* and *Bacillus Welchii* failed to produce cholecystitis agrees in the greater part with the results reported in the literature.

**Intraperitoneal Use of Amniotic Fluid to Promote Postoperative Convalescence.**—Gelfert used a concentrated sterile fraction of bovine amniotic fluid (amfetin) in operative cases of extensive and severe pathologic conditions of the pelvis. Of 100 consecutive laparotomies, the fifty patients showing the most marked pathologic changes at the time of operation were selected for treatment with the amniotic fluid. The remaining fifty of the series were used as controls. There were three deaths in the series of treated patients. Of the treated group 80 per cent had adhesions, while only 36 per cent of the controls were thus complicated and these to a much less extent. Patients receiving the fluid were able to take and retain fluids and food earlier and in larger amounts than the



control group. They were also able to void and pass flatus earlier, unassisted by the usual methods. The group in many ways seemed happier and in better general condition than did the controls. The postoperative posture of these patients approximated more nearly normal than did that of the control patients. The hospitalization period was the same in the two groups owing to the hospital routine, but the treated group desired to be out of bed sooner, in spite of the fact that they had been subjected to more extensive surgery than had the control patients. During the course of clinical observations on the amniotic fluid, in six patients operated on, 400 cc. of sterile saline solution was introduced into the peritoneal cavity to determine whether the results obtained with the fluid might be due to the presence of a fluid in the peritoneal cavity. The reaction of these patients was not different from that of a similar group of patients having the same type of operation, followed by a hypodermoclysis of 400 cc. of physiologic solution of sodium chloride.

### Annals of Medical History, New York

S: 93-184 (March) 1936

- William Withering and the Introduction of Digitalis into Medical Practice. L. H. Roddis, Washington, D. C.—p. 93.  
The History of Electrocardiography. W. G. Leaman Jr., Philadelphia.—p. 113.  
The Gasser of the Gasserian Ganglion. A. W. Meyer, Palo Alto, Calif.—p. 118.  
Studies in Aneurysm by William and John Hunter. F. Beckman, New York.—p. 124.  
Vagal Stimulation Before the Webbers. H. E. Hoff, New Haven, Conn.—p. 138.  
Little Known Names of Medical Men in Vatican Palatine Manuscripts. L. Thorndike, New York.—p. 145.  
Deceased Diseases. D. Riesman, Philadelphia.—p. 160.  
Chlorosis: An Obituary. W. M. Fowler, Iowa City.—p. 168.

### Archives of Neurology and Psychiatry, Chicago

35: 439-700 (March) 1936

- Relation of Cerebrum to Cerebellum: II. Cerebellar Tremor in Monkey and Its Absence After Removal of Principal Excitable Areas of Cerebral Cortex (Areas 4 and 6a, Upper Part): III. Accentuation of Cerebellar Tremor Following Lesions of Premotor Area (Area 6a, Upper Part). C. D. Aring and J. F. Fulton, New Haven, Conn.—p. 439.  
Investigations with Distributive Analysis and Synthesis. O. Diethelm, Baltimore.—p. 467.  
The Marcus Gunn Phenomenon: Report of Case with Suggestions as to Relief. F. C. Grant, Philadelphia.—p. 487.  
Syndrome of Posterior Inferior and Anterior Inferior Cerebellar Arteries and Their Branches. S. P. Goodhart and C. Davison, New York.—p. 501.  
Tumor Involving Frontal Lobe Alone: Symptomatic Survey of One Hundred and Five Verified Cases. C. H. Frazier, Philadelphia.—p. 525.  
\*Mental Symptoms in Cases of Tumor of Temporal Lobe. M. Keschner, M. B. Bender and I. Strauss, New York.—p. 572.  
\*Results of Roentgen Treatment of Series of One Hundred and Nineteen Gliomas. E. Sachs, J. E. Rubinstein and A. N. Arneson, St. Louis.—p. 597.

**Mental Symptoms in Cases of Temporal Lobe Tumor.**—Keschner and his collaborators purposed to ascertain: (1) the frequency and nature of abnormal mental states in cases of tumor involving the temporal lobe, (2) the diagnostic value of such states as localizing symptoms, (3) whether the frequency and nature of the mental symptoms of a tumor involving the temporal lobe differ only from those of a tumor of the temporal lobe and its adjacent areas, and (4) whether there is any significant difference in frequency and nature between the mental symptoms of tumor of the temporal lobe and those of tumor of the frontal lobe. In the entire series of 110 patients, mental symptoms were observed in 103; in thirty-eight patients they were early manifestations of tumor. A study of the changes at operation and observations at necropsy in patients with mental symptoms revealed no definite relationship between the location and nature of the tumor and the frequency and nature of the mental symptoms. Circulatory disturbances followed by secondary softenings in the brain tissue immediately adjacent to the tumor due to direct compression of the blood vessels by the tumor, as well as circulatory disturbances in regions remote from the tumor, were found to play probably as important a part in the production of mental symptoms as the tumor itself. Seventy-nine patients with mental symptoms showed evidences of intracranial hypertension; the latter therefore appears to be an important factor in determining the fre-

quency of mental symptoms in patients with tumor of the temporal lobe. The abnormal mental reactions that occurred were sphincteric disturbances, hallucinations, changes in personality and disturbances of the sensorium, in affect, memory, orientation, intellect and higher psychic functions.

**Results of Roentgen Treatment of Gliomas.**—Their study of the results of roentgen irradiation in 119 gliomas has led Sachs and his associates to the following conclusion: Larger doses of roentgen radiation should be used in the treatment of tumors of the brain. This can be accomplished by (1) using multiple ports of entry instead of two or three, as has been done in the past (in that way it will be possible to deliver a greater total dose to the bed of the tumor), (2) employing fractionated exposures over a prolonged time, (3) raising the percentage depth dose either by increasing the target-skin distance or by using heavier filters or by a combination of the two methods, and (4) devising a safe method of giving therapy into an open cranial wound, thus avoiding the danger to the scalp and flap of bone and delivering a much larger quantity of roentgen radiation into the bed of the tumor.

### Archives of Pathology, Chicago

21: 265-418 (March) 1936

- Cancer of Mammary Glands Induced in Male Mice Receiving Estrogenic Hormone. W. U. Gardner, G. M. Smith, E. Allen and L. C. Strong, New Haven, Conn.—p. 265.  
\*Genital Staphylococcic Actinophytosis (Botryomycosis) in Human Beings. L. Berger, A. Vallée and C. Vézina, Quebec, Que.—p. 273.  
Reactivity of Malignant Neoplasms to Bacterial Filtrates: I. Effect of Spontaneous and Induced Infections on Growth of Mouse Sarcoma 180. G. Schwartzman, New York.—p. 284.  
Gastro-Intestinal Lesion Associated with Staphylococcic Infection in Man: Its Production in Rabbit by Intravenous Injection of Staphylococcus Toxin. R. H. Rigdon and W. A. Leff, Durham, N. C.—p. 298.  
Adenocarcinoma Cell Carcinoma of Intestine (Combined Adenocarcinoma and Squamous Cell Carcinoma): Report of Case with Review of Literature. S. M. Rabson, New York.—p. 308.  
Chronic Coccidioid Meningitis: Review of Literature and Report of Seven Cases. K. H. Abbott and O. I. Cutler, Los Angeles.—p. 320.  
\*Morphologic Aspects of Local Schwartzman Phenomenon. I. E. Gerber, New York.—p. 331.

**Genital Staphylococcic Actinophytosis (Botryomycosis).**—Berger and his associates record a case of true genital botryomycosis of the soft tissues in a woman. The lesions were inflammatory and contained granules resembling those seen in actinomycosis but formed by clusters of staphylococci, which were sometimes associated with colon bacilli. The granules were lined by shells, partly garnished with clubs. The lesions were identical with those described in animals. In the authors' case the coexistence of colon bacilli inside the granules constituted a heretofore unknown feature. The eventual participation of these bacilli in the granule formation is discussed. They refute the identification of true botryomycosis with telangiectatic or pedunculated granuloma or hyperplastic angiomatosis in man. A survey is made of infections showing actinophytic evolution. This appears to be a biologic reaction modality of the organism and to be more frequent than is suspected. It is not restrained to fungus infections but may appear also in actinobacillosis, in staphylococcic infection and in tuberculosis. They propose to replace the name botryomycosis with staphylococcic actinophytosis. The combined analysis of the histogenesis in the present case and of the cases reported in the literature seems to indicate that the granules, shells and clubs are not a direct result or product of the pathogenic agent but seem to arise through a peculiar interaction between these agents and the surrounding exudative elements.

**Morphologic Aspects of Local Schwartzman Phenomenon.**—Gerber presents histologic studies of the Schwartzman phenomenon that confirm the reports of previous observers on the occurrence of inflammation subsequent to skin preparation. However, it can be clearly established that the inflammation is nonspecific and bears no relation to the preparedness of the skin for the phenomenon. These observations lend morphologic support to Schwartzman's concept that the preparatory factors induce a state of vulnerability of the tissues which is "not in the nature of a mere trauma, increased permeability of capillaries or inflammation, but which is probably due to some functional disturbance in the cells which requires a short incubation period for its appearance and which disappears rapidly." The phenomenon is not an expression of augmentation of the inflam-

mation present with skin preparation, since the changes in the tissues occurring in the elicitation of the phenomenon are not dependent on the preexisting inflammation but rather on the actual preparedness of the skin. While the fixation of intravenously administered substances at the site of a local inflammation may play a part in the appearance of the phenomenon, this is only an incidental factor. Chemicals or neutralized filtrates cannot prepare the skin for the phenomenon, and the local inflammation produced by them is unaffected by intravenous injection of reacting factors. There is no basis for considering allergic the inflammation seen with skin preparation in the Schwartzman phenomenon. Although certain morphologic similarities exist between the phenomenon of Arthus and that of Schwartzman, they can be accurately differentiated immunologically and, to a certain degree, morphologically.

### Delaware State Medical Journal, Wilmington

S: 37-54 (March) 1936

Diagnosis of Coronary Arteriosclerosis and Its Chief Complications

C C Wolferth, Philadelphia—p 37

Surgery of Tumors of the Brain F C Grant, Philadelphia—p 44

### Illinois Medical Journal, Chicago

69: 289-380 (April) 1936

Positive and Permanent Identification of the New Born G P Pond, Oak Park—p 327.

\*Simplicity versus Complicated Methods in Reconstruction of Pendulous Breasts. M Thorek, Chicago—p 338

Role of Radiation in Management of Carcinoma of the Breast J Brams, Chicago—p 345.

Frequency of Specific Allergic Reactions Report of Results in Three Hundred Consecutive Cases A A Janson, Evanston—p 349.

Evipal Sodium Anesthesia. H. J Dooley, Oak Park—p 352

Analgesia and Anesthesia in Labor E Cary, Chicago—p 353

Congenital Umbilical Fistula. M. H. Streicher, Chicago—p 355

Myasthenia Gravis: Report of Case W. H. Smith, Benton—p 357

\*Blood Pressure Variability E T Hoverson, Chicago—p 359

Correlation Between Appendicitis and Gallbladder Disease L F Draper, Chicago—p 363

Some Early Medical History of Upper Desplaines Valley, Illinois

C A Earle, Desplaines—p 367

Some Important Uses and Abuses of Electrocardiogram in Heart Disease C. J Lundy, Chicago—p 371.

Trocar with Perforations. M. M Marbel, Chicago—p 375

**Reconstruction of Pendulous Breasts.**—Thorek's technique for the reconstruction of pendulous breasts consists of 1. A supra-areolar convex incision over the anterior hypertrophied and pendulous gland with a second, similarly directed incision beneath the global mass. 2. The removal between these incisions of as much glandular and adipose tissue as is deemed necessary to obtain the desired size and contour. 3. Free circular detachment of the nipple and areola through a circular superficial incision. The subdermal tissues of the nipple must be treated with utmost gentleness. Transplantation of the nipple is then made into a bed prepared at a site selected previously. In the great majority of his cases thus treated there was clinical evidence of good cosmetic result and there was no doubt regarding the viability of the freely transplanted tissue. Surgeons desiring to relieve these patients should acquaint themselves thoroughly with the anatomicopathologic factors underlying the abnormality and the methods for their relief. Patients should be told that with transplantation of the nipple lactation is precluded. When the pendulosity is moderate a transposition operation may be carried out successfully.

**Blood Pressure Variability.**—Hoverson shows that variations in blood pressure, sometimes of great magnitude, occur in the normal healthy person. Determinations were made daily on four patients, selected on the basis of their cooperation and behavior. Their daily life and manner of determination was standardized as well as possible. The leptosome patients show the greater number of changes, while pyknotic patients show fewer changes, and the changes in themselves are less abrupt. This relationship has been found to be quite constant. A critical analysis of the variations shows that there is operative some common factor, for in general all patients show similar periods of increased or decreased pressures. In some instances the changes are quite abrupt, while in others they are accumulative. Possibly the meteorological state may have something to do with the conditioning of the blood pressure responses. However, it is at the most only one of the many factors. Fur-

ther study is indicated in an effort to account for the individual variations. From the form of blood pressures, the author can conclude only that the usual method of recording the blood pressure of say 120/80 is almost valueless. The single reading might be taken at a time when the patient was at a peak or a low level or any point between. It seems that the only logical method then should be to take a series of readings, graph them and draw conclusions from the composite picture. In the conclusions should be considered such things as the frequency of the variations, the type of variation and the magnitude of the changes. Obviously, a person who shows few changes and in whom the changes are minimal is more stable than one who shows abrupt, frequent and maximal variations.

### Journal of General Physiology, New York

19: 559-692 (March 20) 1936 Partial Index

Sulphydryl and Disulfide Groups of Proteins: IV. Sulphydryl Groups of Proteins of Muscle. A. E. Mirsky, New York—p 559.

Change in State of Proteins of Muscle in Rigor. A. E. Mirsky, New York—p 571

Anomalies in Absorption Spectrum and Bleaching Kinetics of Visual Purple. A. M. Chase, New York—p 577

Electrical Charge of Mammalian Red Blood Cells H. A. Abramson and L. S. Moyer, Cold Spring Harbor, Long Island, N. Y.—p 601

### Journal of Immunology, Baltimore

30: 213-274 (March) 1936

Blood Grouping and Poliomyelitis: Report Based on Eleven Hundred and Eighteen Cases in the 1934 Epidemic in Denmark T. Madsen, Copenhagen, Denmark; E. T. Engle, New York, C. Jensen and I. Freuchen, Copenhagen, Denmark—p 213

\*Study of Inactivated Yellow Fever Virus as an Immunizing Agent J. E. Gordon and T. P. Hughes, New York—p 221.

Toxic Substances in Urine and Sweat of Typhoid Fever Patients as Demonstrated by Schwartzman Phenomenon N. Stolyhwo, Riga, Latvia—p 235.

Effect of Heterologous Bacterial Products on Tuberculous Animals J. Freund, New York—p 241.

Observations on Abnormal Iso-Antibodies Following Transfusions. E. Neter, New York—p 255.

Plasma Lipids in Purpura Produced with Antiplatelet Serum. L. M. Tocantins and A. Cantarow, Philadelphia—p 261.

Carbohydrate Containing Proteins of Hemolytic Streptococcus. M. Heidelberger and F. E. Kendall, New York—p 267.

**Inactivated Yellow Fever Virus as an Immunizing Agent.**—Gordon and Hughes state that yellow fever virus inactivated by heat, by exposure to ultraviolet radiation or by formaldehyde did not possess any demonstrable immunizing property. In these experiments immunity, when it occurred, was the result of a demonstrated infection. Neither a solid nor a partial immunity followed the parenteral injection of large amounts of inactivated virus.

### Journal of Infectious Diseases, Chicago

58: 129-224 (March-April) 1936

Psittacosis: Review of Literature on Lesions of Central Nervous System. Report of Case. D. H. Sprunt and G. P. Berry, Durham, N. C.—p 129

\*Cytoplasmic Inclusion Bodies in Human Throat. Jean Broadhurst, Rosamond M. Laming, Margaret Estelle MacLean and Inez Taylor, New York—p 134

Mechanism of Immunity in Experimental Poliomyelitis C. W. Jungeblut, New York—p 150.

\*Vaccination Against Tuberculosis. Comparative Study in Man and Animals H. J. Corper, A. P. Damierow, M. L. Cohn and C. B. Vidal, Denver—p 158

Dissociation of Saccharomycetes Acetis Sacchari Fabian and Hall and Pichia Alcoholophila Klöcker L. J. Wickerham and F. W. Fabian, East Lansing, Mich.—p 165

Variation of Salmonella Pullorum H. Van Roekel and L. F. Rettger, New Haven, Conn.—p 172

Bactericidal Effect of Peroxides in Irradiated Cod Liver Oil F. A. Stevens, New York—p 185.

Antigenic Similarity of Two Strains of Noncapsulated, Methemoglobin Producing Organisms to Type XXIX Pneumococcus. Sarah Eyre and W. D. Stovall, Madison, Wis.—p 190

Effect of Bile on Bacteriophage Phenomenon Martha Applebaum and Marjorie B. Patterson, New York—p 195

Effects of Ozone on Certain Bacteria and Their Respective Phages. Studies in Bacterial Metabolism, CV A. I. Kendall and A. W. Walker, Chicago—p 204

Observations on "Prezone" of Certain Bacteriophages: Studies in Bacterial Metabolism, CVI. A. I. Kendall and A. W. Walker, Chicago—p 215.

**Cytoplasmic Inclusion Bodies in Human Throat.**—Broadhurst and her associates state that cytoplasmic inclusion bodies may be demonstrated in human throats and other parts of the upper respiratory area. A relatively high proportion of

persons with certain of the milder respiratory irritations are positive for these inclusion bodies. Carriers of these inclusion bodies may show an increasingly heavy incidence in the epithelial cells of the throat—both in the number of cells affected and in the number of bodies per cell. These inclusion bodies are rarely present in epithelial cells that contain bacteria. They are easily demonstrated in epithelial cells of affected persons; but they do not persist, in the same form at least, outside the host cells. These epithelial inclusion bodies seem acceptably classified as inclusion bodies: they multiply only when living tissue is available. They stain pink with Giemsa's stain (after Zenker's fluid). An aggregate structure (as in Negri bodies of rabies) and a capsule may be demonstrated by appropriate stains. Special stains have been developed for their ready differentiation from other cell parts and constituents and extraneous material, notably nigrosin-sodium chloride for throat specimens and methyl green-pyronin for embryo chick cultures.

**Vaccination Against Tuberculosis.**—Corper and his co-workers show that in animals there is a retardation of virulent tuberculous infection resulting from a previous vaccination with viable avirulent human and bovine tubercle bacilli. Avirulent tubercle bacilli in amounts exceeding 0.001 mg. of fine suspension per cubic centimeter produce in man and animals definite intracutaneous local lesions similar to those resulting from the injection of the same nonviable tubercle bacilli. The extent of such local lesions in man and the slow retrogression of these would not seem to warrant the use of excessive amounts of these bacilli as has been done in the past for producing immunity. Avirulent human or bovine (BCG) tubercle bacilli do not produce progressive lesions when injected intracutaneously in man and, when injected in amounts capable of causing tubercle without ulceration (0.01 mg.), lose their viability in these lesions within about six months. Likewise, large cutaneous local ulcers completely heal with scar formation in approximately six months. The reactions to viable avirulent tubercle bacilli in man, used in amounts revealing visible changes, show a sequence of changed reaction on repeated monthly injections similar to the changes noted in animals and occurring coincidentally with the development of artificial immunity in these animals. There is an apparent paradox resulting from this reaction in that the lesions produced by small or large numbers of virulent tubercle bacilli are retarded by the immune reaction as a result of preventing or retarding the multiplication of virulent bacilli. There exists a biologic specificity of the immune reaction in animals with avirulent bovine tubercle bacilli against virulent bovine infection which would suggest a greater efficiency from the use of avirulent human tubercle bacilli against virulent human infection. For this reason perhaps a mixed vaccine for human purposes deserves consideration. When viable avirulent tubercle bacilli are to be used for vaccinating, an amount of bacilli should be used well within the range of producing a visible reaction and yet not excessive to the point of producing abscesses.

### Journal of Nervous and Mental Disease, New York

83: 381-504 (April) 1936

- Peculiar Types of Reflex Synergias Observed in Comatose Patients. C. F. List, Ann Arbor, Mich.—p. 381.  
Study of Action of Bromides in Clinical and Experimental Epilepsy. B. Boshes, Chicago.—p. 390.  
Hallucinations in Psychoses. J. M. Hill, White Plains, N. Y.—p. 405.  
Hematomyelia Secondary to Hemangioma. A. C. Buckley, Philadelphia.—p. 422.  
Central Nervous System Involvement in Undulant Fever: Report of Case and Survey of Literature. R. N. DeJong, Ann Arbor, Mich.—p. 430.

**Hematomyelia Secondary to Hemangioma.**—Buckley reports a case of hemorrhage into the substance of the spinal cord. The hemorrhage was spontaneous; that is, it occurred without external injury or unusual physical exertion. The hemorrhage constituted the terminal outcome of an intramedullary angioma, which until a week before the patient's death produced no marked discomforting subjective symptoms and therefore was not diagnosed during life. The conspicuous feature existed in a mature type of vessel, both venous and arterial, with the three tunics of the vessel walls clearly differentiated, and in a few instances thick walled but degenerated arteries,

that is, showing definite hyaline changes in the muscular coat. It is very likely that the hemorrhage into the substance of the cord resulted from rupture of one of the hyalinized blood vessels or of the thin wall of a cavernous channel or both. Furthermore, it is apparent that the anomalous vascular development had existed from early life, judging from the mature forms of arteries and veins in the hemangioma, some of which were of unusual size and thickness of their walls, some of which had undergone degenerative change. The fact that the patient suffered little or no inconvenience from an extensive invasion of the substance of the spinal cord by vascular hyperplasia furnishes a striking example of the adaptability of the nervous structure to mechanical interference. The patient had complained from time to time of pain in the region of the shoulders and arms. With the exception of the pain that was regarded as "rheumatic," the patient was well until eight days before death, when he awakened with severe pain in the right arm, followed by weakness and complete loss of motion in the legs. He was admitted to the hospital three days later with complete motor and sensory loss in the affected limbs, retention of urine, bloody spinal fluid under pressure of 8 mm. of mercury and subsequently severe pains in the legs made worse by passive movement and, later, vomiting and respiratory difficulty. The course of the malady terminated in death. The paralysis was the result of secondary hemorrhage originating in an embryonal developmental anomaly—an angioplastic hypertrophy.

### Journal of Pharmacology & Exper. Therap., Baltimore

56: 265-388 (March) 1936

- Antiseptic Action of Certain 2-Furan Mercurials. N. M. Phatak and C. D. Leake, San Francisco.—p. 265.  
Protective Measures in Diphtheria Intoxication. P. J. Hanzlik and B. Terada, San Francisco.—p. 269.  
Determination of Ethyl Alcohol in Body Fluids. H. Newman, San Francisco.—p. 278.  
Effect of Methylamino Methyl Heptene (Octin) on Intact Intestine in Nonanesthetized Dog. C. M. Gruber, with occasional assistance of R. Heilgman and A. DeNote, Philadelphia.—p. 284.  
Studies on Site of Stimulation of Salivation by Intraventricularly Injected Pilocarpine in Dogs. R. B. Aird and Mary F. Montgomery, San Francisco.—p. 290.  
\*Antagonism Between Ephedrine and Procaine After Cisternal Injection During Morphine-Sodium Amytal Anesthesia and Ether Anesthesia. R. M. Isenberger and J. C. Rice, Kansas City, Kan.—p. 307.  
Comparative Study of Choline and Certain of Its Analogues: II. Cationic Exchange as Means of Reaction of Choline, Acetylcholine and Their Analogues with Cells. M. H. Roepke and A. D. Welch, Toronto.—p. 319.  
Effects of Morphine and Its Derivatives on Intestinal Movements: V. Contributions to Analysis of Intestinal Records. H. Krueger, I. Lampe and J. G. Reid, Ann Arbor, Mich.—p. 327.  
Comparative Study of Effects of Sodium N-Hexylethyl Barbiturate (Ortal Sodium) and of Sodium Iso-Amylethylbarbiturate (Sodium Amytal) on Excised Smooth Muscle. C. M. Gruber, R. Scholten, A. DeNote and J. F. Wilson, Philadelphia.—p. 341.  
Iodine Metabolism of Adult Rat in Relation to Trauma, Thyroid Activity and Diet. Versa V. Cole and G. M. Curtis, Columbus, Ohio.—p. 351.  
Study of Acquired Resistance of Fixed Tissue Cells Morphologically Altered Through Processes of Repair: I. Liver Injury Induced by Uranium Nitrate: Consideration of Type of Epithelial Repair Which Imparts to Liver Resistance Against Subsequent Uranium Intoxications. W. De B. MacNider, Chapel Hill, N. C.—p. 359.  
Id.: II. Resistance of Liver Epithelium Altered Morphologically as Result of Injury from Uranium, Followed by Repair, to Hepatotoxic Action of Chloroform. W. De B. MacNider, Chapel Hill, N. C.—p. 373.  
Id.: III. Resistance to Chloroform of Naturally Acquired Atypical Type of Liver Epithelium Occurring in Senile Animals. W. De B. MacNider, Chapel Hill, N. C.—p. 383.

**Antagonism Between Ephedrine and Procaine.**—Isenberger and Rice tested the efficacy of ephedrine sulfate as an antagonist to procaine hydrochloride by limiting the actions of the drugs, partially and temporarily, to the medulla. Localization was accomplished by cisternal injection, which rules out some of the complicating factors that are produced by rapid excretion, detoxication and differential fixation following other methods of administration. The resistance of the circulatory centers to procaine depression was generally greater than resistance of the central respiratory mechanism. Anoxemia is apparently the most damaging factor in circulatory depression accompanying procaine respiratory paralysis, and adequate artificial respiration is usually definite protection against this anoxemia. This contention is supported in the experimental

results obtained by Isenberger (1930), in which he demonstrated the value of artificial respiration and administration of oxygen in respiratory and circulatory depression following intraspinal and intravenous procaine poisoning. It is evident that ephedrine is antagonistic to procaine by actions other than its peripheral circulatory effects. Improved circulation from intracisternal ephedrine cannot always be entirely responsible for the early return of spontaneous breathing in animals with respiratory paralysis induced by intracisternal procaine. Ephedrine stimulated nervous structures subserving depressed reflexes almost instantaneously in these experiments. Important experimental evidence on this subject has been presented by Schmidt and Wright. Whether the procaine found its way into the central nervous tissue through open foramina or was transported by obscure physicochemical processes, rapid respiratory paralysis and abolition of higher reflexes were obtained consistently.

### Medical Annals of District of Columbia, Washington

5: 59-88 (March) 1936

- Peptic Ulcer: Considerations of Etiology and Surgical Treatment. J. T. Mason, Seattle.—p. 59.  
Jaundice. W. M. Ballinger, Washington.—p. 64.  
Compensable Aggravation and Acceleration of Preexisting Infirmities Under Workmen's Compensation Act. K. Garve, Los Angeles.—p. 72.  
Fundamentals of Internal Medicine: Diseases of Nervous System. A. Schneider, Washington.—p. 74.

### Michigan State M. Society Journal, Grand Rapids

35: 155-218 (March) 1936

- Diagnosis of Brain Tumors. R. W. Waggoner, Ann Arbor.—p. 155.  
The Michigan State Medical Society: Review. H. Cook, Flint.—p. 160.  
Analysis of Visual Findings in Subnormal Individuals. H. E. Dowling, Detroit.—p. 164.  
Injection Treatment of Cystic Enlargements of Scrotum: Hydrocele and Spermatocoele. W. A. Keitzer, Ann Arbor.—p. 168.  
Historic Markers. W. J. Stapleton Jr., Detroit.—p. 170.  
Total and Permanent Deafness from Parotitis. J. H. Bristow, Bay City.—p. 175.  
Upper Urologic Tract Obstruction and Hypertension. L. W. Hull, Detroit.—p. 175.  
Hypertrophic Stenosis of Pylorus in an Adult. E. G. Krieg, Detroit.—p. 178.  
Inadequate Poor Laws. R. G. Tuck, Pontiac.—p. 179.

### Nebraska State Medical Journal, Lincoln

21: 121-160 (April) 1936

- Operative Obstetrics. J. L. Baer, Chicago.—p. 121.  
Treatment of Some of the More Common Skin Disorders in Infancy. C. G. Weigand, Omaha.—p. 125.  
One Thousand Patients with Heart Tracings. M. C. Andersen, Omaha, and G. R. McCutchan, Council Bluffs, Iowa.—p. 128.  
Surgical Treatment of Essential Hypertension: Case Report. J. D. Bisgard and J. C. Sharpe, Omaha.—p. 131.  
Macrocytic Hyperchromic Anemia in Pregnancy: Case Report. E. C. Sage, Omaha.—p. 133.  
Diagnosis and Treatment of Anemia: IV. So-Called "Secondary" Anemias. J. C. Sharpe, Omaha.—p. 136.  
Puerperal Foot Drop. J. E. M. Thomson, H. E. Harvey and H. S. Morgan, Lincoln.—p. 137.  
Hematology of Tuberculosis. J. K. Miller, Ingleside.—p. 140.  
The Management of Anal Fissures. R. R. Best, Omaha.—p. 141.  
Cardiac Clinic Number One: Consideration of Cardiac Mortality, Rates and Epochs of Heart Disease. F. W. Niehaus, Omaha.—p. 144.  
Ovarian Cyst. M. Emmert, Omaha.—p. 146.

**Hematology of Tuberculosis.**—Miller states that the value of the blood sedimentation rate in tuberculosis cannot be estimated too highly. However, it is specific only of cellular (tissue) destruction and is not diagnostic or prognostic. It is an indicator of pathologic activity. The rapidity of rate is directly proportional to the amount of activity. The severity of the disease may be further evaluated by plotting a curve of the rate of sedimentation against the time interval; viz., a horizontal line is normal, a diagonal line shows mild activity, a diagonal curve moderate activity, a vertical curve marked activity. In cases in which the clinical and roentgen signs are indefinite, it is invaluable. The prognosis, the degree of activity and the efficacy of therapy can be obtained only by consideration of a series of successive correlated studies of the Schilling test, blood sedimentation rate and monocyte-lymphocyte ratio. Just as these tests may reveal activity before the clinical evidence is detectable, in the same manner the pathologic state is persistently detectable after clinical quiescence. The laboratory is merely offering procedures that aid in the demonstration of the presence or absence of pathologic activity.

### New Orleans Medical and Surgical Journal

88: 601-668 (April) 1936

- Common Manifestations of Gastro-Intestinal Food Allergy. W. H. Browning, Shreveport, La.—p. 601.  
Digitalization in Cardiac Failure. L. J. Dubos, New Orleans.—p. 606.  
Heart Disease in Middle Life. H. G. Riche, Baton Rouge, La.—p. 610.  
Traumatic Hernia. R. O. Simmons and K. Rand, Alexandria, La.—p. 614.  
Review of Page's Epidural Anesthesia: Report of One Hundred Cases. C. B. Odum, New Orleans.—p. 618.  
Uses of Hypnosis in Psychotherapy. E. Connely, New Orleans.—p. 627.  
Roentgenographic Study of Sphenoid Sinus. E. C. Samuel and E. R. Bowie, New Orleans.—p. 632.  
Avalution of Tibial Tubercle (Osgood-Schlatter Disease). P. A. McIlhenny, New Orleans.—p. 636.  
The Occipitoposterior Position. G. A. Mayer, New Orleans.—p. 639.

### New York State Journal of Medicine, New York

36: 469-590 (April 1) 1936

- Allergic Manifestations in the Nervous System. F. Kennedy, New York.—p. 469.  
Polyglandular Disease. G. Crile, Cleveland; H. Turner, Oklahoma City, and P. McCullagh, Cleveland.—p. 475.  
Review of Established Anesthetics, with Analysis of Deaths in New York City for Five Year Period. C. W. Henson, New York.—p. 485.  
\*Thrombocytopenic Purpura, Following Medication with Sedormid and with Phenobarbital. E. P. Boas and L. A. Erf, New York.—p. 491.  
Infectious Gastro-Enteritis. J. P. Garen, Olean.—p. 495.  
Sarcoma of the Prostate: Report of One Case. T. M. Townsend and O. A. Kobisk, New York.—p. 499.  
Traumatic Subdeltoid Bursitis: Treatment by Physical Medicine. J. Echtman, New York.—p. 503.  
Appendicitis: Study of Five Hundred and Ninety-Six Consecutive Cases. F. W. Bancroft and E. R. Skoluda, New York.—p. 507.

**Thrombocytopenic Purpura.**—Boas and Erf present two cases that illustrate unusual reactions to rather common drugs. The first is one of symptomatic thrombocytopenic purpura caused by allylisopropylacetyl carbamide (sedormid); the second illustrates thrombopenic and febrile reactions that may follow the administration of phenobarbital. Sensitivity may become manifest after long usage of a drug, and symptoms frequently develop when a drug is again taken after having been discontinued. Many unexplained mouth ulcers, bleedings, headaches and fevers are due to such drug sensitivity. Purpura has been observed following the administration of many drugs, such as quinine, neoarsphenamine, iodides and phenobarbital. The authors' patient, who had been taking phenobarbital, first developed fever, then a diffuse maculopapular rash, and purpura appeared only four days later. The same sequence occurred in a reported case of drug purpura. Subsequently when the patient was tested against the drug she promptly became febrile taking small doses, but no rash appeared nor did the blood platelet count fall. The patient who developed thrombocytopenic purpura following medication with allylisopropylacetyl carbamide is more instructive. The case again illustrates the fact that typical severe purpura may be only a symptomatic manifestation of drug idiosyncrasy. This must always be borne in mind, particularly when there are repeated bouts of purpura with spontaneous recovery. In this patient the appearance of purpura coincided with her menstrual period on two occasions. This might lead to the suspicion of some endocrine factor provoking the blood dyscrasia. Self medication for the relief of menstrual pain or discomfort is so common among women that "allergotoxic" symptoms recurring periodically with the menses should always arouse the suspicion of drug idiosyncrasy. Transient monthly recurring disorders in women, particularly with gastro-intestinal symptoms or cutaneous manifestations, always call for careful investigation of drugs that may have been taken to relieve menstrual distress.

### Oklahoma State Medical Assn. Journal, McAlester

29: 69-116 (March) 1936

- Important Features in Urologic Surgery of Posterior Urethra Occasionally Overlooked. E. S. Sullivan, Oklahoma City.—p. 69.  
Urologic Methods in Treatment of Nephritis. B. A. Hayes, Oklahoma City.—p. 73.  
X-Ray in Diagnosis and Treatment. E. D. Greenberger, McAlester.—p. 76.  
Silicosis. I. W. Bollinger, Henryetta.—p. 81.  
Value of Prenatal and Postnatal Care. J. C. Wagner, Ponca City.—p. 84.  
Tonsillectomy. R. E. Roberts, Stillwater.—p. 86.

## Surgery, Gynecology and Obstetrics, Chicago

62: 653-780 (April) 1936

- Value of Radiation Therapy in Treatment of Carcinoma of Breast: Critical Analysis of Published Statistics. R. G. Hutchison, Glasgow, Scotland.—p. 653.
- \*Healing Process in Tuberculous Spondylitis: Histopathologic Case Study. J. G. Finder, Iowa City.—p. 665.
- Anesthesia and Blood Lipids. E. M. Boyd, Kingston, Ont.—p. 677.
- \*Cholangiography: Modified Technic for X-Ray Visualization of Bile Ducts During Operation. S. A. Robins and L. Hermanson, Boston.—p. 684.
- Effects of Vagotomy on Gastric Functions of Monkeys. J. H. Ferguson, University, Ala.—p. 689.
- Effect of Total Hysterectomy on Ovary of Macacus Rhesus: Experimental Study. T. H. Burford and A. W. Diddle, New Haven, Conn.—p. 701.
- Anomalous Right Subclavian Artery: Its Practical Significance: Report of Three Cases. B. J. Anson, Chicago.—p. 708.
- Tumors of Spermatic Cord, Epididymis and Testicular Tunics: Review of Literature and Report of Forty-One Additional Cases. G. J. Thompson, Rochester, Minn.—p. 712.
- Gastrostomy in the Management of Gastric and Esophageal Carcinoma. W. L. Watson, New York.—p. 729.
- \*Pathologic Fractures Due to Malignant Disease. C. E. Welch, Boston.—p. 735.
- Lymphopathia Venereum—"Lymphogranuloma Inguinale"—of Female Urethra. L. A. Gray, Baltimore.—p. 745.
- Plastic Operations for Construction of an Artificial Vagina. C. W. Flynn and J. W. Duckett, Dallas, Texas.—p. 753.
- Occurrence of Different Types of Brain Tumors in One Patient. E. Sachs, St. Louis.—p. 757.
- Undulant (Malta) Fever, Osteomyelitis and Arthritis. J. Kulowski, St. Joseph, Mo.—p. 759.
- Five and Ten Year End Results of Treatment of Cancer of Cervix Uteri by Irradiation. B. F. Schreiner and W. H. Wehr, Buffalo.—p. 764.

**Healing Process in Tuberculous Spondylitis.**—Finder discusses a case of extensive tuberculosis of the spine that healed under conservative treatment. The bone tissue went on to healing, so that osteosclerosis developed at the sites of skeletal lesions; in one place complete union by bony fusion occurred between two vertebrae. The tuberculous disease of the spine in this study had been existent in a quiescent stage for many years. No signs of activity were evident even at the time of death, which resulted from a marked exacerbation of pulmonary disease and a miliary dissemination of the tuberculosis shortly before the end. Healing was indicated by many tissue changes, such as fibrosis of bone marrow, osteosclerosis, bony fusion, sequestration of necrotic bone, organization of tuberculous abscesses and scarring of diseased intervertebral disks. Healing was associated with evidence of immunity of bone tissue to tuberculosis, a fact substantiated by histopathologic observations. The pathologic observations are interpreted in the light of the biologic and immunologic processes. The routine microscopic examinations of sections representing the eight vertebral segments revealed involvement. The author's explanation of healing in tuberculous spondylitis is that near a focus of destruction there is a greater concentration of toxins and therefore greater irritation of nearby bone marrow, which responds by fibrosis and osteogenesis. As the distance from the point of toxin production increases, the damaging substances become more dilute and the bone tissues react to a much less marked degree. He considers insignificant the possibility of mechanical irritation or pyogenic infection as the cause of fibrosis and sclerosis in his case. Bone healing is further manifested by bony fusion of the vertebrae and by the elimination of tuberculous necrotic bone areas. The tissues that react to toxin irritation by fibrosis also acquire an increased resistance to infection by the tubercle bacillus. Evidence to substantiate this statement is furnished by the ability of miliary tubercles to invade myelogenous bone marrow and their inability to develop in places in which the marrow spaces are filled with fibrous tissue. When miliary dissemination occurred shortly before the patient's death, the immune fibrotic areas withstood the fresh invasion and no young tubercles developed. The more remote regions, however, did not receive the benefit of inoculation with toxins; as a result the tubercle bacilli found susceptible tissue in the regions of hematopoietic bone marrow, in which young tubercles were seen with relative frequency. Although the general picture is one of quiescence of the tuberculous process, certain areas show activity: osteoclasia occurs in relation to abscesses and traumatization. Fibrous tissue

develops in an attempt to organize abscesses and even invades the caseous tissue of a tuberculous sequestrum in an attempt to resorb and organize it. The infection in the intervertebral disks heals by fibrous tissue scarring. In some places motion persists in the intervertebral space after destruction of the disk and, by mechanical irritation, tends to transform simple fibrous tissue into a primitive intervertebral disk.

**Cholangiography.**—Robins and Hermanson modify the technic of Mirrizi by injecting the radiopaque medium into the duct before it is disturbed and by substituting hippuran in place of iodized oil. They have used the method in twenty-five cases. The first roentgenogram failed to agree in only one case with the exploratory observations and check-up roentgenogram. In this instance the dye stopped abruptly at the ampulla and failed to enter the duodenum. The impression was that obstruction probably existed at the ampulla, but exploration and check-up roentgenograms revealed that the duct and ampulla were patent. In four instances the pancreatic ducts were visualized, and chronic pancreatitis, as evidenced by enlargement and hardening of the gland, was found on exploration. These patients continue to complain of symptoms in whole or in part, and the authors believe, therefore, that this observation is of prognostic significance. No untoward reactions have been encountered as a result of injecting hippuran into the bile ducts. This procedure is intended to furnish information not available by any other diagnostic method in present use. Since extremely small stones and so-called sand bile will not show on the roentgenogram, judgment as to what should be done in cases in which the evidence is not clear cut will depend as heretofore on the clinical evaluation of the case arrived at after thorough diagnostic study. A complete study should not be omitted even if this method is to be employed. The only contraindication to this procedure is the presence of acute infection in the biliary tract. Roentgen visualization of the bile ducts according to the technic described interferes in no way with the conduction of the operation. On the contrary, by providing the surgeon with visual evidence it should be of considerable value. This is especially true in the case of common duct obstruction due to stone. With further experience it should likewise provide valuable information in such conditions as neoplasm of the bile ducts, neoplasm of the head of the pancreas, hepatic stone, cholangitis, diverticula of the bile ducts, internal biliary fistula and stricture.

**Pathologic Fractures Due to Malignant Disease.**—In order to clarify the subject of pathologic fractures due to malignant disease, Welch studied the entire series of sixty-six pathologic fractures observed in the Pondville Hospital since 1927. No evidence of healing was obtained in fifty-three cases. Experimental study reviewed shows that treatment of a simple fracture with moderate doses of x-rays accelerates healing. Healing with firm union occurred in 5 per cent, 9 per cent showed moderate healing, 6 per cent healed slightly and no evidence of healing was obtained in 80 per cent. Of the nine fractures that healed, either fully or moderately, six received roentgen therapy to the bone after the fracture. The average length of life following fracture through carcinoma was slightly less than six months. After fracture through osteogenic sarcoma, the length of life averaged slightly more than a year.

## Tennessee State Medical Assn. Journal, Nashville

29: 85-126 (March) 1936

- Lobar Pneumonia in Children. O. H. Wilson, Nashville.—p. 85.
- Allergy in General Practice. C. S. Thomas, Nashville.—p. 88.
- The Ophthalmologic Symptoms of Endocrine Dysfunction. W. T. Davis, Washington, D. C.—p. 93.
- The Relation of Thoracic Surgery to Otolaryngology. D. M. Carr, Memphis.—p. 102.

## Wisconsin Medical Journal, Madison

35: 253-328 (April) 1936

- Obligation of Medical Science to the Public. E. J. Carey, Milwaukee.—p. 267.
- Has the Pendulum Swung Too Far in Conservative Treatment of Ruptured Appendix? C. W. Eberbach, Milwaukee.—p. 271.
- Undulant Fever in Wisconsin. L. V. Sprague, Madison.—p. 275.
- Symptoms Following Cholecystectomy. W. J. Tucker, Ashland.—p. 280.
- Oil Pneumonia. G. Ritchie, Madison.—p. 286.
- Various Operative Procedures in Treatment of Peptic Ulcer. W. Walters, Rochester, Minn.—p. 293.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Journal of Ophthalmology, London

20: 129-192 (March) 1936

- Vision and Illumination in Coal Mines, with Reference to Miners' Nystagmus. F. W. Sharpley.—p. 129.  
Injuries of Eye Caused by Sports. S. de Grösz.—p. 148.  
Secondary Hemorrhage Following Curettage of Meibomian Cyst: Case. J. G. D. Currie and J. P. F. Lloyd.—p. 162.  
Acute Unilateral Retrobulbar Neuritis Associated with Nasal-Sinus Disease: Case. R. R. James, S. C. Thomson, L. Colledge and H. G. Hodgson.—p. 164.  
Extraction of Cataract by Electrodiaphano Method (After Lopez Lacarrère of Madrid). M. Khalil.—p. 167.  
Visual Acuity Test for Malingers. J. N. Duggan.—p. 175.

## British Medical Journal, London

1: 295-348 (Feb. 15) 1936

- \*Puerperal Sepsis from Point of View of Surgery. V. Bonney.—p. 295.  
Manipulative Treatment of Subacute and Chronic Fibrositis. T. S. Wilson.—p. 298.  
\*New Treatment of Fibrositis. G. L. Scott.—p. 302.  
Femoral Osteotomy in Treatment of Osteo-Arthritis of Hip. S. A. S. Malkin.—p. 304.  
Osteo-Arthritis of Hip and Knee: Description of Surgical Treatment. J. F. Mackenzie.—p. 306.  
Measles and Convalescent Serum. G. W. Elkington.—p. 308.  
Needles in Feet: Method of Removal in Difficult Cases. E. I. Lloyd.—p. 310.

**Puerperal Sepsis and Surgery.**—Bonney concludes that, if the number of sporadic cases of puerperal sepsis is to be diminished, obstetrics must fully adopt the methods of surgery in its already largely successful efforts against sporadic post-operative sepsis of intrinsic origin. These methods may be summed up as the sterilization or, if sterilization is not possible, the exclusion from the field of action of the approaches to the operation area, the avoidance of unnecessary trauma and unnecessary hemorrhage in that area, and the removal beforehand of septic foci in other parts of the body. To these, it is to be hoped, the future will add reliable immunization of the patient before the operation. Hopeful results from the use of antistreptococcus serum in cases of labor in which sepsis after delivery was specially to be feared have recently been reported by Thomson.

**New Treatment of Fibrositis.**—Scott discusses the pathogenesis and the inadequacy of the focal theory in fibrositis. The observation that under certain conditions of irritation the fibrositic nodule apparently introduces toxic material into the circulation when the original focus of infection has long been removed must suggest that it has itself become a focus, secondary to the infecting focus, but needing no reinforcement for its effective existence. If such a conception is dismissed as mere conjecture, it may be found difficult to explain a phenomenon which the author observed when local treatment was instituted to raise the local resistance of the attacked muscle and to eliminate the fibrositic mass. An oil suspended vaccine, prepared by the addition of dried streptococcus substance to olive oil, was injected into the inflamed tissue. Within a few hours the area became hot and tender, and the same malaise and evening pyrexia, but both more marked, occurred as when massage was applied or iodized oil injected. At the end of a few days all symptoms subsided abruptly, leaving the fibrositic area comparatively painless and no longer obvious to the fingers. Accompanying this local change a most marked gain in general health was often observed. Persons who had been in poor condition for years regained their normal color and appearance in a week or two and recovered a vigor and activity they had been resigned to losing. Not all were so fortunate, for the improvement was seen only in patients less than 30 years of age and only when the fibrositis was of great severity and long standing. When it did occur, as in perhaps half the cases, the change was exceedingly remarkable. It was not forthcoming when the oil was injected into healthy muscle or into a fibrositic area in which the inflammation was slight. The lipovaccine was made up in two strengths, representing one and ten million organisms (polyvalent streptococci isolated from rheumatic patients) suspended in sterile olive oil. Apart from systemic benefit and from conjectures as to its meaning, the injection of lipovaccine caused a more or less complete disappearance of

the local disability in eighteen of twenty-five cases, a partial improvement in three and no result in four. Of the last four, two persons were more than 60, and in two chronic lumbago was associated with old scoliosis. Almost every patient had suffered for more than ten years.

## Journal of Tropical Medicine and Hygiene, London

39: 41-52 (Feb. 15) 1936

- Yaws Campaign and Epidemic of Poliomyelitis in Western Samoa. S. M. Lambert.—p. 41.  
Calcium Metasilicathydrogel and Silicum Colloid Dioxide for Treatment of Sugar in Urine and Blood. A. S. de Hermany.—p. 46.

## Lancet, London

1: 349-408 (Feb. 15) 1936

- \*Treatment of Pernicious Anemia with Dakin and West's Liver Fraction (Anahem). C. C. Ungley, L. S. P. Davidson and E. J. Wayne.—p. 349.  
\*Antianemic Principle of Liver: Note. J. F. Wilkinson.—p. 354.  
Prognosis After Infarct of Heart: Clinical Study. J. Cowan.—p. 356.  
Some Observations on Experimental Renal Section. J. Gray.—p. 359.

**Treatment of Pernicious Anemia with Dakin and West's Liver Fraction.**—Ungley and his associates treated thirty-six cases of pernicious anemia with the Dakin and West liver fraction. The material has been compared with other liver preparations in respect to the production of reticulocyte responses, increase of red blood cells and clinical improvement. The results indicate that the fraction is highly active for blood regeneration in pernicious anemia. Total quantities of from 1 to 6 cc. (100 to 600 mg., average amount 359 mg.), administered usually in divided doses to eleven patients with initial red blood cell counts below 2 million per cubic millimeter, were sufficient to cause an average increase of erythrocyte concentration amounting to 2.31 million in forty days. Good responses followed the administration of amounts sometimes as small as 10 mg. daily or from 100 to 200 mg. as a single dose. For maximal reticulocyte responses and for the production of red blood cells at a maximal rate, larger doses were usually required. There are not sufficient data to assess quantitatively the potency of the preparation as compared with other liver extracts, but in the authors' experience no other liver extract given in the small amounts used in this investigation has produced such striking results. Preliminary observations suggest that this highly purified fraction may prove to be at least as potent as other liver extracts in the treatment of the neurological manifestations of pernicious anemia.

**Antianemic Principle of Liver.**—Wilkinson confirms the fractionation (Dakin and West) of liver extracts containing the antipernicious anemia principle by means of Reinecke acid to yield a more highly potent fraction. By the use of this method, products have been obtained of which 58 mg. produced a maximal reticulocyte response and a rapid remission in a patient with pernicious anemia. Applying this method to other methods of separation, a further increase in hematopoietic potency has been secured so that as little as 18 mg. of the product has been sufficient to initiate a maximal reticulocyte response and rapid remissions in pernicious anemia.

## Medical Journal of Australia, Sydney

1: 187-220 (Feb. 8) 1936

- \*Major Surgery in Patients Over Seventy Years of Age. A. Newton.—p. 187.  
Treatment of Tetanus: Experiences at the Royal Alexandra Hospital for Children, Sydney. F. Tidswell.—p. 198.  
Lowenthal's New Cutaneous Manifestation in Syndrome of Vitamin A Deficiency Observed in Papuan Natives. W. E. Giblin.—p. 202.

**Surgery in Elderly Patients.**—Newton discusses the results of 100 major operations, performed on patients more than 70 years of age. The main groups of diseases were cholelithiasis, carcinoma of the breast, hypertrophy of the prostate, abdominal carcinomas, acute abdominal emergencies, direct inguinal hernias and various miscellaneous diseases. Problems relating to the surgical management of each of these groups are reviewed. The preoperative and postoperative treatment of aged patients is discussed. There were eight deaths in the series. Sixty-six patients are alive and well at periods from a few months to ten years after the date of operation. It is suggested that the age factor should not be given undue consideration when operative measures are necessary.



## Archives des Maladies du Cœur, Paris

29: 153-228 (March) 1936

- \*Pericardial Puncture Especially by Epigastric Subxiphoid Route. A.-B. Marfan.—p. 153.  
Influence of Complete Arrhythmia on Roentgenologic Appearance of Mitral Endocarditis. D. Routier and Dwelshauvers.—p. 179.  
Digitalis Intoxication: Case. W. Tomaszewski and W. Lapa.—p. 196.  
Study of Action of Digitalin and Ouabain. O. Spuhler.—p. 207.

**Pericardial Puncture.**—Marfan discusses several aspects of pericardial puncture. The difficulties in the diagnosis of pericardial effusion are often real. There are several routes by which a pericardium may be punctured, but he considers especially and in detail the subxiphoid route. There are some advantages in this route and only two principal contraindications for its use: excessive abdominal tympanism and deformity of the lower border of the sternum. He concludes from his discussion and study that, if the existence and abundant nature of pericardial effusion is suspected, it may be necessary to make a pericardial puncture. The subxiphoid epigastric route, if a rigorous technic is followed, offers less difficulty and danger than other methods.

## Lyon Chirurgial

33: 129-256 (March-April) 1936

- Surgical Details of Malignant Tumors of Eustachian Tube. M. Jacod.—p. 129.  
Some Aspects of Evolution of Villous Tumors of Rectum and Notably Their Malignant Transformation. P. Santy, P. Mallet-Guy and P. Croizat.—p. 147.  
\*Venous Ligation in Purulent Septic Diseases of Extremities. P. N. Napalkow and F. B. Chein-Cheifitz.—p. 158.  
Functional Stenoses of End of Small Intestine in Nursling. P. Lombard.—p. 179.

**Venous Ligation in Septic Diseases of Extremities.**—Napalkow and Chein-Cheifitz distinguish two types of venous ligation. The first is that done during the course of phlebitis or thrombophlebitis in which the infection is localized and which is aimed at the prophylaxis of embolism, ascending phlebitis and septicemia. The second is performed during septicemia. The anatomopathologic studies of the conditions mentioned indicate that the infections progress by extension along the principal venous trunks. Hence it is not surprising that ligation of the venous branches was less successful than of the principal trunks. Ligation of the vein, better than any other operative means, is successful in interrupting the route by which a generalized infection would occur. It does not depend on the bacterial form. The most important condition to be met, however, is the choice of time and stage at which to perform the ligation. It is also important that the principal vein rather than a collateral be ligated and that the ligation be applied at a sufficient distance from the primary infection. Finally, the sheath of the operated vein should not be closed but should be left largely open. If these criteria are met the procedure is quite successful and advantageous in both types of infection.

## Rinascenza Medica, Naples

13: 181-216 (March 31) 1936

- \*Pulmonary Stasis and Tuberculosis. D. Maestrini.—p. 187.  
Blood Picture of Lymphogranuloma. M. Bortolozzi.—p. 191.  
Thiobromine in Treatment of Polyuria. E. Cominelli-Guariglia.—p. 195.

**Pulmonary Stasis and Pulmonary Tuberculosis.**—Maestrini says that stasis of the pulmonary circulation originates in mitral insufficiency or in pulmonary tuberculosis more frequently than in other abnormalities of the heart and pathologic conditions of the heart and lung. There is no roentgen or clinical characteristic picture proper of pulmonary stasis of pure mitral origin. In cases of pulmonary stasis in which mitral insufficiency and parenchymal lesions of the lung are proved by the electrocardiogram and by the roentgen examination of the lung, the differential diagnosis of the origin of the stasis is based on the results of the biologic tests, the most important being that for the detection of tubercle bacilli in the sputum. The hypodermic injection of Koch's old tuberculin comes next in importance. If there is a local and a general reaction to the tuberculin test, the pulmonary stasis is certainly of tuberculous origin. The Pirquet and Mantoux reactions are of no value for tuberculosis in adults, except in certain special conditions.

## Archiv für Verdauungs-Krankheiten, Berlin

59: 1-128 (Feb.) 1936. Partial Index

- \*Significance of Catalase (and Triboulet) Reaction for Diagnosis and Prognosis of Intestinal Diseases. S. Kemp and T. Thune Andersen. C'tn.—p. 1.  
Pseudolinitis Plastica of Gastro-Intestinal Tract Caused by Psammocarcinoma of Ovary. K. Hoesch.—p. 17.  
Combination Test of Kidney for Functional Analysis and as Foundation for Determination of Diet. R. Meier and G. Weitzmann.—p. 28.

**Catalase Reaction of Feces in Intestinal Disturbances.**—Following an evaluation of Triboulet's reaction, Kemp and Andersen call attention to Norgaard's catalase test and stress its importance. Then they describe the catalasometer devised by Kemp for the quantitative determination of catalase and report their experiences with it in the course of the examination of the feces of 1,716 patients with intestinal disturbances. They found that on the basis of the catalase values intestinal disorders can be classified into two groups: (1) intestinal disorders in which increased catalase content of the feces is comparatively rare or slight and (2) intestinal disorders in which the increase in the catalase content is comparatively frequent and severe. To the first group belong patients with chronic constipation, fermentation dyspepsia, chronic mucous colitis and gastric achylia with constipation. The intestinal disorders of the second group are acute enterocolitis, the dysenteries, chronic proctitis, intestinal cancer and intestinal tuberculosis. The catalase reaction is not a specific reaction for inflammations but merely a cell reaction which, in its pathologic form, appears in all disturbances that cause an abnormal cell admixture to the intestinal contents. Its diagnostic significance in intestinal disorders lies in the fact that it directs attention to the possibility of the existence of a serious organic disorder. This is the case especially if the catalase content is greatly increased and this increase is demonstrated in repeated examinations. If the increase in the catalase content does not tally with the other clinical aspects, a thorough examination of the intestine is necessary (roentgenoscopy, rectoscopy and so on). If the catalase values are constantly normal, a severe intestinal disorder is not likely, but they do not exclude such a disorder definitely, especially in cases in which a latent intestinal tuberculosis seems possible. The authors think that the catalase test is indicated in all chronic diarrheas (with or without a simultaneous achylia), in persistent constipation colitides, particularly in those with proctitic symptoms, in cases in which intestinal cancer or tuberculosis is suspected, in acute specific infections of the intestine, particularly during the period of convalescence, for the purpose of controlling the therapeutic results, and, finally, as a complementary examination to the search for cysts in chronic (or acute) amebic dysentery.

## Medizinische Klinik, Berlin

32: 373-408 (March 20) 1936. Partial Index

- Epidemic Cerebrospinal Meningitis. C. Hegler.—p. 373.  
\*Diabetes Mellitus and Pregnancy. J. Kraus.—p. 375.  
Health Hazard and Intoxications Caused by Industrial Cleansing Methods and by Production and Industrial Use of Polishing and Cleansing Agents. W. Estler.—p. 378.  
\*Treatment of Pulmonary Abscesses with Short Waves. E. Schliephake.—p. 380.  
Serologic Diagnosis of Tuberculosis. Mazet.—p. 386.  
Influence of Cutaneous Stimuli on Threshold of Stimulus for Perception of Temperature. J. Schneyer.—p. 387.

**Diabetes Mellitus and Pregnancy.**—Kraus points out that pregnancy is comparatively rare in diabetic women and sees the chief cause for this in the severe regressive changes that take place in the ovaries. The most important change is atrophy of the follicle apparatus; but, although these changes explain the sterility of the diabetic woman, it is not entirely clear how these atrophic changes develop. Inquiry as to their cause directs attention to the hypophysis as the incretory organ that controls the gonads. In this connection the author mentions the studies he conducted in the course of necropsies on young diabetic patients. He observed a reduction in the weight and in the eosinophil cells of the hypophysis. In view of these changes, particularly in the anterior lobe, he assumes a reduced functional activity of the hypophysis and ascribes the regressive

changes in the gonads to a reduced production of the gonadotropic hormone. Although a large number of diabetic women are sterile, diabetes and pregnancy nevertheless concur and in the majority of these cases the diabetes existed before conception; but there are also cases in which the diabetes appears after onset of the pregnancy. In the latter cases the increased calls of the pregnant organism on the pancreas as well as on the other endocrine organs may lead to the manifestation of a formerly latent diabetes, and the diabetes may again disappear at the end of the pregnancy. The author discusses the exacerbation of diabetes during pregnancy, pointing out that it usually appears during the early stages of pregnancy, whereas during the second stage the danger which the diabetes represents for the mother is lessened. This improvement during the later stages of pregnancy is often ascribed to the compensatory action of the fetal pancreas. However, during delivery, puerperium and lactation the diabetes is often once more exacerbated. On the whole, women in whom pregnancy improves the diabetic condition are in the minority. To be sure, since the introduction of insulin the prognosis of the diabetic mother has been considerably improved. Insulin therapy involves the danger of hypoglycemic coma, particularly during the first days of the puerperium but also during pregnancy. In order to avoid excessive insulin dosage and with this the danger of hypoglycemic coma, the blood and the urine must be kept under constant control. Diabetes is even more unfavorable for the infants than for the mothers, the mortality of the infants being still extraordinarily high in spite of insulin therapy. On the other hand, diabetic mothers have comparatively often overdeveloped infants (20 per cent compared to 3 per cent in normal mothers). The majority of authors see the cause of this overdevelopment in the hyperglycemia of the mother.

#### Treatment of Pulmonary Abscess with Short Waves.—

Schliephake states that he tried short wave therapy in cases of pulmonary abscess in which surgical treatment seemed inadvisable. Since his material varies greatly in regard to etiology and to localization of the abscess, he gives a number of case reports. These histories indicate that he used wavelengths of 6 and of 12 meters. Occasionally he began with lesser energies and shorter durations and gradually increased both, the durations up to twenty or thirty minutes. The intervals between the treatments as well as the total number differed in the individual cases. Patients received treatments every day, every second day or twice each week. Improvement was often noticeable after a few treatments, but the total number of treatments was sometimes twenty and even more than thirty. The author also cites others who used short wave therapy successfully in the treatment of pulmonary abscesses. He says that the experiences of Liebesny indicate the importance of the proper technic, pointing out that his efforts failed as long as he used apparatus with inadequate efficiency but were successful as soon as he used a different apparatus with correct adjustment of the electrodes. This same point, namely, the importance of the proper apparatus, the author stresses once more in the conclusion, pointing out that the apparatus must have great efficiency over a great air distance. He cites Fiandaca's observations on twelve patients with gangrenous pulmonary abscesses. He emphasizes that reported results indicate that large suppurations may be absorbed under the influence of the short wave field. Moreover, this method of treatment does not tax the patient like a surgical intervention, for instance, and it was found that even patients with cardiac insufficiencies tolerated the treatment well. The general condition was frequently improved after the first treatment. Another important factor is that the majority of cases healed without any undesirable sequels. To be sure, in some cases the subsequent roentgenograms revealed a slight, diffuse turbidity, but in many cases later roentgenoscopy disclosed nothing indicative of a former disorder. The pulmonary abscesses were of various origins (pneumonia, influenza, aspiration of suppurating material, embolism, suppurated echinococcus and bronchiectasis). It was found that the bronchiectatic processes take a somewhat singular position, since they do not react as favorably and as rapidly as the abscesses of different origins.

### Münchener medizinische Wochenschrift, Munich

83: 507-546 (March 27) 1936. Partial Index

Trauma in Dermatology. E. Riecke.—p. 507.

B<sub>1</sub> Avitaminosis, Its Relation to Neuritic Disorders and Their Treatment with Betaxin. M. Hofer von Lobenstein.—p. 510.

Chronic Rheumatic Articular Disorders. O. Vontz.—p. 511.

Further Observations of Stomatitis Aphthosa. W. Hertz.—p. 516.

\*Surgical Treatment of Hammer Toe. H. Regele.—p. 517.

\*Results of Mild Concussions of Brain. A. Reuter.—p. 520.

Experiments with Analgesic Action of Cobra Toxin. J. Seifer.—p. 527.

**Surgical Treatment of Hammer Toe.**—According to Regele, hammer toe is a rather common foot deformity, and particularly in persons whose occupation necessitates much standing the pains in the contracted joint are severe. Moreover, infections from cutting the corn, suppurating bursitis and fistulas are rather frequent. Congenital hammer toe, which usually involves the second toe and often appears in several successive generations, accounts for only a small percentage of cases of hammer toe and rarely causes complaints. A small proportion of the acquired hammer toes are the result of disease or trauma, but the greatest number is caused by static-vestimental factors and involves chiefly the fifth, fourth and third toes. The great toe may likewise be involved. The little toe is most frequently affected but the discomfort is usually bearable, whereas the contractions of the fourth and third toes are usually extremely painful. The author explains the anatomic aspects and the development of hammer toe and points out that, after the contracture has become rigid, only surgical treatment will correct the condition. The surgical treatment is quite simple, so that it can readily be done by a practitioner experienced in minor surgery. The author employs a modification of Hohmann's method. He emphasizes that an existing bursitis must heal before surgical intervention. Under local anesthesia a longitudinal incision is made, beginning a few millimeters distal to the middle phalanx and extending over half the length of the basal phalanx. The corn is incised with the other tissues. The head of the basal phalanx is exposed without severing of the lateral ligaments. The head and the adjoining portion of the basal phalanx are cut off. Tendon suture and fixation of the toes with splint or plaster are unnecessary. The superfluous skin on the dorsum of the toe disappears and the two bones become joined in a tight new joint with cicatricial shrinkage of the lateral ligaments and of the periosteum that was left behind. The tendons become adjusted to the shortening without special intervention. The author employed this operation with satisfactory results on more than 100 patients (often bilaterally and on several toes).

**Results of Mild Concussions of Brain.**—Reuter admits that mild concussions of the brain are occasionally tolerated without requiring treatment. This is proved particularly by numerous sport injuries, in which concussion of the brain with short loss of consciousness and vomiting passes off without treatment. The same can be said about slight brain traumas during childhood. On the other hand, it cannot be denied that after mild, apparently negligible head injuries symptoms may persist for several weeks and even for months. The author illustrates this with cases in which the patients themselves did not regard the brain trauma as serious. The usual complaints in these cases are headaches with vertigo, nervous irritability, depression, fatigue, the feeling that the mental faculties are declining, excitation and distraction. Then there are sympathetic manifestations, such as sweating, cold, damp hands and feet and other vasomotor phenomena. The vertigo is probably the result of a central vasomotor disturbance. The blood pressure is frequently below 100 mm. of mercury. All these symptoms must be ascribed to an impairment of the central nervous system, whether there are histologically demonstrable changes or not, for not every functional disturbance of the central nervous system causes anatomic changes. The impairment is reversible, for it disappears within several weeks or months. In some cases there seems to exist a cerebral swelling accompanied by symptoms of increased intracerebral pressure. In addition to headaches and vomiting there is slowing of the pulse, rigidity of the neck, Kernig's sign and venous stasis in the fundus of the eye. The swelling of the brain is often favorably influenced by intravenous infusion of hypertonic solutions. Moreover, the signs of intracranial pressure do not

necessarily appear immediately after the trauma but may develop several days later, particularly if the patients take up their work again without regard to the cerebral concussion. The author points out that several weeks of rest in bed is advisable, particularly in the cases in which the symptoms are rather severe, even if the trauma seemed only slight. On the other hand, the patient should not refrain from work too long, and it should be realized that, when work is taken up again, there may at first be a recurrence of the headaches, vertigo and fatigue, even though these had already disappeared during the period of rest.

### Zentralblatt für Gynäkologie, Leipzig:

60: 721-784 (March 28) 1936. Partial Index

- Frequency of Cornifying Atypical Epithelium in Prostitutes. O. Bandilla and E. Günther.—p. 722.  
Early Complications in Treatment of Carcinoma of Cervix Uteri. K. J. Anselmino and R. Oehlke.—p. 724.  
Menarche, Constitution and Delivery. C. Weysser.—p. 728.  
Sterilization by High Cervical Amputation. W. Zoefgen.—p. 737.

**Menarche, Constitution and Delivery.**—Weysser's investigations are based on the fact that the time of the menarche has a considerable constitutional significance, particularly as regards the genital function. He cites Feldweg's report, which was based on a gynecologic and obstetric material of approximately 3,000 cases and in which it was proved that the incidence of menstrual disturbances, as well as of pathologic deliveries is higher in women who have a premature or belated menarche than in women in whom menstruation begins at the normal age. The author himself gained the impression that there is a difference between the disorders that develop in women who had a premature menarche and those that develop in women in whom the menarche was retarded. In order to obtain more definite information about this problem he made statistical studies on 1,115 deliveries, which revealed that there is a greater incidence of obstetric complications in women who had a premature or a belated menarche than in women with a normal menarche. Moreover, there were characteristic differences between the types of complications. Whereas in women with a belated menarche the difficulties produced by the skeletal structure are most common (narrow pelvis), in women with a premature menarche the complications of the soft parts (perineal tear, episiotomy) are most frequent.

**Sterilization by High Cervical Amputation.**—Zoefgen cites factors suggesting that a normal upward passage of the sperm into the uterine body and an undisturbed pregnancy are impossible without the cervix. Accordingly he raises the question whether simple amputation of the cervix might not be a substitute for the more complicated methods of sterilization. He states that, of twenty-four women in whom he performed amputation of the cervix for the treatment of various pathologic conditions such as cervical tears, laceration, ectropium, extensive erosions and hypertrophies of the cervix, not one became pregnant again. In these cases the amputation of the cervix had been done in the following manner: After ample dilation by means of Hegar's method in order to facilitate the subsequent Sturmdorff plastic operation, the author detaches the anterior and posterior vaginal mucous membrane at the os, joins the wounds laterally by an acute-angle incision, detaches the bladder and parametrium anteriorly and laterally, incises posteriorly up to Douglas's fold, divides the cervix by lateral incisions, makes wedge-shaped excisions from the cervix anteriorly and posteriorly, and covers the anterior and posterior uterine wounds according to Sturmdorff's plastic method. The formation of the lips of the os by double threads is further secured by buried sutures of the laterally remaining wounds. In spite of the fact that the cosmetic results were always satisfactory, pregnancies never developed again, and the author concludes that the operation was responsible for the sterility, and he employed it for this purpose in two cases. However, in investigating the literature, he found no mention of this sterilizing effect of cervical amputation. In answer to the question as to the height of the cervical amputation for the purpose of effecting sterility, he says that removal of from 2 to 3 cm. of the cervical canal is adequate, but, even if the amputation would be made higher up (infracorporeal), the involved opening of the posterior Douglas space would be a comparatively slight complication compared to the abdominal

tubal sterilizations. He concedes that further observations will be necessary for a final evaluation of cervical amputation as a sterilizing operation. On the other hand, the sterilizing effect of cervical amputation contraindicates this intervention in women who are still able to bear children.

### Acta Medica Scandinavica, Stockholm

SS: 129-406 (March 20) 1936. Partial Index

- Paroxysmal Cold Hemoglobinuria. H. Björn-Hansen.—p. 129.  
Cerebral Symptoms in Acute Myocardial Infarction. H. Kjærgaard.—p. 196.  
Intracranial Endocrine Glands and Hormones of Cerebrospinal Fluid. L. Papadato and B. Sapkova.—p. 204.  
Clinical Aspect and Dietetic Treatment of Chronic Gastritis. M. Pevsner and O. Gordon.—p. 278.  
Sedimentation Rate of Red Blood Corpuscles in Expansive Disorders of Brain. E. Ask-Upmark.—p. 283.  
Part Played by Stomach in Regulation of Blood Formation. H. Vlados, A. Bagdasarov, M. Dulcin and E. Bondarenko.—p. 295.  
Meningitis in Mumps. H. Silwer.—p. 355.

**Cerebral Symptoms in Acute Myocardial Infarction.**—Kjærgaard discusses the symptomatology of acute myocardial infarction on the basis of twenty-five cases. He lists the following as the most important forms of myocardial infarction: (1) instantaneous death, (2) febrile angina, (3) the pain-free type, (4) the gastric type and (5) the cerebral type. The feature common to all these types is acute cardiac insufficiency, on which the diagnosis has to be based, as it must be remembered that every acute cardiac deficiency in adults is suggestive of myocardial infarction. The author emphasizes that, in contrast to the pulmonary and gastro-intestinal phenomena, the cerebral symptoms in acute myocardial infarction have not previously been the subject of discussion. Since among the twenty-five patients under his observation there were three in whom the clinical picture of the disease was dominated completely by the cerebral symptoms, the author wants to call attention to this type. He gives a detailed description of these three cases, in which the diagnosis was verified by the necropsy. The first presented the aspects of mental disease. The author thinks that the protracted periods of restlessness and confusion were presumably attributable to a coexistent cerebral arteriosclerosis and possibly also to small cerebral emboli from thrombi of the aneurysm. The other two cases took an acute course. One of these patients died about nine hours after the onset with epileptiform convulsions, collapse, restlessness and unconsciousness. The other patient was in coma and collapse on admission to the hospital, the condition resembling a narcotic intoxication. Death followed twenty-four hours later.

**Sedimentation Rate in Expansive Disorders of Brain.**—Ask-Upmark studied the sedimentation rate of the erythrocytes according to the Westergren method in ninety-three instances of verified expansive lesions of the brain. An increase of the sedimentation rate above 20 mm. in one hour was registered, particularly in malign gliomas of the cerebral hemispheres and also in metastatic tumors, tuberculomas, brain abscess and subdural hematoma. A sedimentation rate not exceeding 10 mm. in one hour may occur not only in the conditions already mentioned but also in a series of comparatively more benign conditions (meningiomas, astrocytomas, oligodendrogliomas and angiomas). The tumors of the pituitary of parapituitary region frequently presented an obvious increase in the sedimentation rate in spite of the clinically comparative benign character of these cases. The possibility that this may depend on a central influence is briefly mentioned. From the practical point of view it may be said that, if a tumor is diagnosed in the cerebral hemisphere and if the patient has no fever, an increased sedimentation rate indicates a clinically more malign condition, whereas a fairly normal sedimentation rate does not exclude the presence of such a condition.

**Regulation of Blood Formation.**—Vlados and his associates describe their studies on dogs, conducted in order to find answers to the following problems: (1) whether anemia develops in case of partial, subtotal or total resection of the stomach and what are the duration and character of such a disturbance, (2) the exact location of the production of Castle's antianemic factor and (3) the nature of the factor that regulates the blood formation by the stomach. They found that

an anemic status developed usually in case of total resection of the stomach of dogs, as well as in case of extensive subtotal resection in human subjects. The type of the anemia that develops seems to depend on the constitutional peculiarities of the organism in question, for in some cases the anemia is hypoplastic, while in others it is hyporegenerative (chlor-anemia) or resembles pernicious anemia. The resections of the different portions of the stomach indicate that Castle's factor is produced by the fundus and pylorus, while the cardia apparently does not participate in its formation. After the removal of the pylorus, the authors observed the development of an anemia, which soon disappeared owing to the compensatory action of the ferment produced by the fundus. In case of removal of the fundus, anemia was somewhat more severe but would still pass, obviously on account of the compensating activity of the remaining pylorus. In discussing the nature of Castle's factor, the authors express the opinion that it is probably a ferment. The hormone nature of the factor has not been proved.

**Meningitis in Mumps.**—The material examined by Silver consists of fifty cases of mumps, twenty of which manifested clinical symptoms of meningitis. In addition, the spinal fluid in thirty cases of mumps without meningeal symptoms was examined. When attention was paid to the occurrence of clinical symptoms of meningitis in mumps, these symptoms were observed in from 8 to 10 per cent of all cases. They appeared from one to eleven days after the onset of the swelling of the parotid gland. No definite connection with orchitis could be discovered. The meningeal symptoms were slight or moderately pronounced, headache and stiffness of the neck being the most common. Apart from the classic symptoms of meningitis, other symptoms from the central nervous system were rare. In only one case did the clinical symptoms remain longer than six days after the onset of the meningeal symptoms. On lumbar puncture the pressure of the fluid was found to be normal in nearly all these cases. In only one case was the fluid turbid. The globulin reactions (Pandy and Nonne-Apelt) were negative or slightly to moderately positive. The number of cells in the fluid varied from 3 to 920 per cubic millimeter. The mononuclear cells were generally predominant. The highest percentage of polymorphonuclear cells was 42. In some cases without clinical symptoms of meningitis the lumbar punctures revealed nothing pathologic. In others they disclosed conditions like those previously mentioned. The changes in the fluid were observed from the day following the appearance of the swelling of the parotid gland up to fifty days later. The sugar contents of the fluid varied between 72 and 78 mg. per hundred cubic centimeters and formed between 61 and 99 per cent of the blood sugar. The prognosis was good in all cases. One case of meningitis without a definite etiology is recorded as possibly being parotid meningitis.

### Hospitalstidende, Copenhagen

79: 197-204 (Feb. 25) 1936

\*Acute Recurrent Hepatitis.—Hepatargy: Hepatargy Therapy. E. Polack. —p. 197.

**Acute Recurrent Hepatitis.**—In Polack's case of acute hepatitis a violent recurrence in connection with an angina during convalescence quickly led to hepatargy. Treatment consisted in large doses of dextrose, with from 12 to 16 international units of insulin, twice daily after the first day, at first intravenously and then orally. On the first day 1 liter of a 6 per cent solution of dextrose was also given intramuscularly. Improvement appeared after several days' intensive carbohydrate therapy, and a continued diet rich in carbohydrates and deficient in albumin, together with insulin, resulted in complete recovery. The marked hemorrhagic diathesis that occurred with the hepatargy disappeared simultaneously with the general improvement.

79: 229-252 (March 10) 1936

\*Congenital Valve Formation in Prostatic Urethra and Congenital Urethral Stenosis in Women. V. Aalkjær.—p. 229.  
Simultaneous Occurrence of Pernicious Anemia and Aplastic Anemia. S. A. Holbøll.—p. 246.

**Congenital Valve Formation in Prostatic Urethra.**—One case of this condition and one case of congenital urethral stenosis in women are reported by Aalkjær, who also cites

the eight Danish cases previously reported, five of congenital valve formation in the prostatic urethra and three of congenital urethral stenosis in women, and discusses the anatomic peculiarities of these forms of stenosis, their etiology and the resulting anatomopathologic changes. The symptoms of stenosis may be absent or indefinite, in which case the disturbance is revealed only on the appearance of uremia. Mainly for this reason the diagnosis until recent years has not been made often during life. When the disorder is borne in mind, the stenosis can readily be recognized by the aid of a normally calibrated catheter, by cystography and possibly by ureteroscopy. Mistaken diagnosis of enuresis or its sequels as nephritis is frequent, and chronic or recurrent infections of the urinary tract have been considered the basic disorder; uremic symptoms have led to confusion with gastro-intestinal or meningeal cases. Treatment of congenital valve formation in the prostatic urethra consists in removal of the valves. As in prostatic hypertrophy, drainage of the urinary tract must often precede; kidney function tests sometimes show that drainage can be limited to a few days. In the few reported cases of congenital urethral stenosis in women in which diagnosis was made during life, dilation of the orifice was done; the effectivity of the treatment is still uncertain.

79: 253-276 (March 17) 1936

\*Lymphogranulomatosis. Katrine Ebbelhøj.—p. 253.

**Lymphogranulomatosis.**—Ebbelhøj discusses the symptoms, treatment and prognosis on the basis of forty-four cases of microscopically verified lymphogranulomatosis treated in the Aarhus radium station from 1931 to 1935. The sexes were equally represented, and the ages varied from 3 to 76, the largest group being between 20 and 30 years and the next between 40 and 50. She says that, since Hodgkin's disease can also cause cavities and appear in a nodular form resembling miliary tuberculosis, there may be confusion with tuberculosis, and, when the lymphogranulomatosis is first localized in the gastro-intestinal canal, the symptoms are so varied and far from characteristic that diagnosis is not made until postmortem or at a possible operation for suspected ileus or cancer. Lymphogranulomatosis of the bones, which may occur in all stages of the disease but usually appears in the second year, is most frequently localized in the spinal column, then in the ribs and sternum, but may be found in the long bones, cranium and elsewhere. The bony system is attacked by either the lymph or the blood way or directly from the surrounding tissue, and the clinical as well as the roentgenologic and anatomopathologic picture varies. The changes generally appear in later roentgenograms as a bone-destroying process, although osteoblastic, sclerosing forms also are found, with periosteal osseous neoformations. The author states that a peculiar fair, transparent complexion with red cheeks is frequent in patients with multiple lymphoma and is always an unfavorable prognostic sign; she has not seen this characteristic described elsewhere. Dividing her material as far as possible into four groups (Gilbert and Babaianz), the first group, consisting of a highly febrile, acute form with immediate generalization, lasting up to two months and resistant to therapy, is represented by one case; the second group, consisting of cases in which there is rapid progression, poor general condition and fatal outcome in from six months to two years, by ten cases and additional ones among patients still living; the third group, with tendency to localization where recurrences are less frequent, general condition unaffected for a long period and length of life from three to ten years, by seventeen cases and probably further cases among those observed for only a short time as yet, and the fourth, with marked chronic form and length of life up to twenty-five years, by two cases. Roentgen therapy excels all other methods of treatment for immediate and continued effect, and the third group constitutes the real field for the therapy. Both general and local irradiation are used, the former mostly at times when local therapy is not indicated. Usually local treatment of glands and also of lungs, spleen and bone tissue is given, the dose varying as the superficial or the deeper tissues are treated from 1,000 to 1,400 roentgens in each series, with single doses of from 100 to 200 roentgens every day or every other day as indicated.

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## PATHOLOGIC INTERPRETATIONS OF ROENTGENOLOGIC SHADOWS IN PNEUMOCONIOSIS

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Of the various medical aids in the problem of pneumoconiosis, roentgenology should be ranked first for the most accurate qualitative and quantitative measures of tissue damage in the living patient. Notwithstanding this fact, it must be admitted that such observations are not absolute. After all, what is impressed on the mind in viewing roentgenograms is only a well conditioned illusion, usually based on long experience in observations of serial roentgenograms on patients. As a matter of fact, absolute data can be established only on direct studies of the diseased tissues, requiring not only a study of the pathologic changes but also a study of the x-ray shadows of the lesions corresponding to anatomic changes. In this manner alone may the shadows accurately be translated into damaged tissue. While the pathology of silicosis has by no means been slighted, as the extensive work of Gardner,<sup>1</sup> Kettle,<sup>2</sup> Mavrogordato<sup>3</sup> and others will bear witness, the attempt to record the morbid anatomy of the disease into roentgenologic shadows has not been so frequent. Recently Sweany, Porsche and Douglass<sup>4</sup> reported a study in pneumoconiosis, attempting to correlate the chemistry and pathology, but the further comparison to roentgenologic shadows was only briefly outlined. The plan in this work is to carry out the correlation of the postmortem observations with antemortem roentgenologic shadows and, when possible, the clinical manifestations. This has been made possible by the fact that there were complete data assembled on most of the patients studied, including chemical examinations and postmortem lung roentgenograms.

It is my aim to complete this comparative study by comparing the pathologic changes to the postmortem and antemortem roentgenograms on types that either have not been described at all or have been insufficiently emphasized.

In the recorded descriptions of the various stages of uncomplicated silicosis, there is little to add to the

standard descriptions of Irvine,<sup>5</sup> Pancoast<sup>6</sup> and others. The first stage has been described as an increase in the density and size of the hilus lymph nodes, a perivascular thickening (arborization) out toward the pleura, and a slight fine mottling in the parenchyma. In the second stage there are the typical nodular shadows, from 2 to 6 mm. in diameter, scattered out from the hilus, usually more numerous on the right. These shadows are usually round or oblong, with a soft even density. Finally, as these shadows become more numerous or coalesce into larger masses, the condition is classed as the third stage.

In a series of films on various forms of pneumoconiosis, however, these classic forms are really not common. The pathologic condition is frequently altered by various combinations of dust or commonly by infection, particularly tuberculosis. In silicosis the tubercle bacillus alters the disease considerably, depending on the dosage of bacilli, the amount of silicosis present and the time of appearance of either one with respect to the other, as well as other factors. The varying conditions produce a series of roentgenologic shadows that sometimes simulates a fibroid tuberculosis so closely that a proper diagnosis without a history is impossible. In such cases, serial roentgenograms are the only ones of any value.

There are other forms of pneumoconiosis that have rather definite characteristics but which have not been sufficiently emphasized. For example, pure anthracosis is rather typical, but not all the characteristics of it are well recorded. The rather definite shadows of an asbestosis is in need of wider appreciation. Anthracosilicosis that gradually shades into silicosis, and a combination of silicosis, anthracosis and tuberculosis that varies with the time of appearance of the various elements and the quantities of each, also present interesting combinations of roentgenologic shadows. Other modifying factors, such as iron and clay, not to mention the many organic dusts, leave much yet to be determined. By no means have these types been definitely established.

In order to facilitate this attempt it seems expedient, as has been suggested in a previous work,<sup>7</sup> to separate the field of pneumoconiosis into a convenient and logical working classification. This plan was based chiefly on the type of pathologic change, combined with the causative agent. The principal features of differentiating these groups depends on the presence or absence of specific fibrosis, the presence of lymphatic occlusion, or the presence of the toxic agent that causes irritation. Two or more factors may be associated in the same case; such mixtures are considered in a special group.

From the Research Laboratories of the City of Chicago Municipal Tuberculosis Sanitarium

Read before the Section on Pathology and Physiology at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 13, 1936

<sup>1</sup> Gardner, L. U. The Pathologic Reaction in Various Pneumoconioses, *J. A. M. A.* **101**: 594 (Aug. 19) 1935

<sup>2</sup> Kettle, E. H. *J. Path. & Bact.* **38**: 201 (March) 1934.

<sup>3</sup> Mavrogordato, A.: Publication 15, South Africa Inst. M. Research, 1922.

<sup>4</sup> Sweany, H. C.; Porsche, Jules, and Douglass, J. E.. *Arch. Path.*, to be published

<sup>5</sup> Irvine, L. G.: Symposium, Proc. Transvaal Mine Medical Officers' Assn. (special supp.) **10**: 44, 1931.

<sup>6</sup> Pancoast, H. K., and Pendergrass, E. P.: *Pneumoconiosis*, New York, Paul B. Hoeber, Inc., 1926.

<sup>7</sup> Sweany, H. C.. *Am. J. Clin. Path.*, to be published.

These four main divisions, therefore, with some of the principal subgroups, may be listed as follows:

- I. Coniofibrosis, including:
  1. Silicosis.
  2. Silicotuberculosis.
  3. Asbestosis and the like.
- II. Coniolympthstasis, including:
  1. Anthracosis.
  2. Siderosis and the like.
- III. Coniotoxicosis, including:
  1. Protein sensitization.
  2. Direct irritation and other causes.
- IV. Mixed processes:
  1. Anthracosilicosis.
  2. Siderosilicosis.
  3. Anthracosilicotuberculosis and other conditions.

I shall discuss these groups in order.

#### CONIOFIBROSIS

Coniofibrosis may be considered as a form of pneumoconiosis characterized by an exuberant growth

vital parts of the cell in the process of its own hydration. Since silicic acid penetrates limestone, sandstone, wood and other substances on the earth's crust and produces petrification, it is not unreasonable to suspect a similar mechanism on living cells, although living cells would be injured long before a petrification could set in.

In any event the silica is inhaled into the lungs as particles usually less than 5 microns in diameter. The particles are phagocytosed and are either expelled with the bronchial secretions or pass into and along the lymphatics. Once in the lymphatics, the phagocytes pass upward toward the lung hilus and fill the lymph node sinuses and lymphatic vessels. According to Gardner<sup>1</sup> there is considerable activity of these phagocytes, but Mavrogordato<sup>2</sup> and Policard<sup>10</sup> are of the opinion that the phagocytes are soon paralyzed by the silica and pass along with the current until they lodge where the whorls of fibrous tissue develop. The process continues until the fibrous whorls fill the lymphatics and later appear in the parenchyma. The stage of the

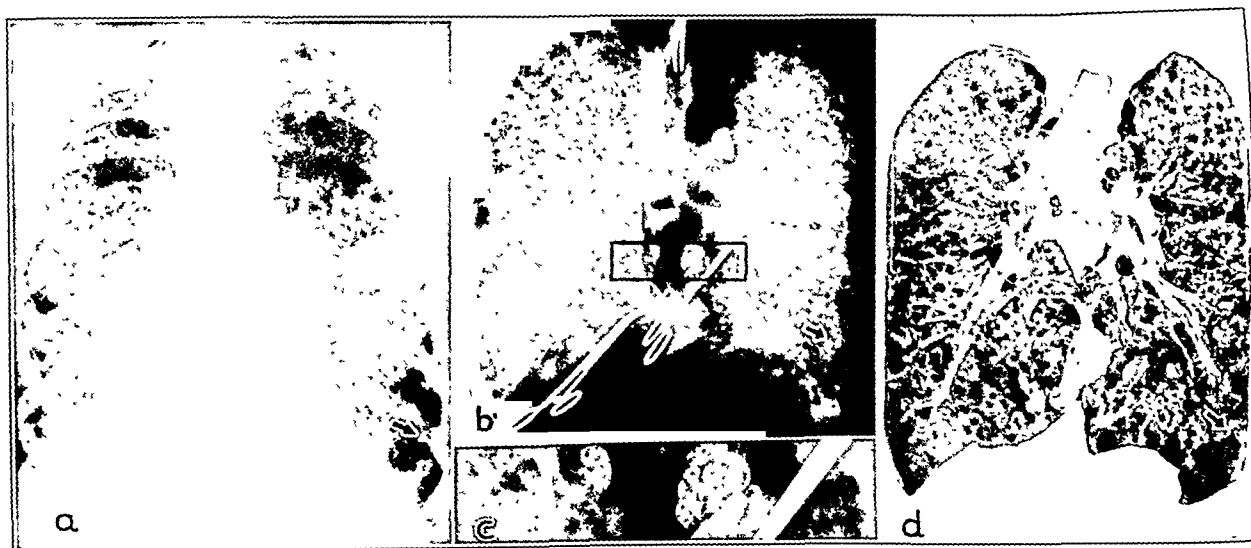


Fig. 1 (case 1).—a, typical distribution but unequal density of lesions, and a slurring characteristic of an encroaching tuberculosis in a silicosis. b, roentgen appearance post mortem. c, enlargement of mediastinal lymph nodes shown in rectangle of b. d, lateral section through main bronchi.

of connective tissue due to a specific irritant. Under this heading are included silicosis, silicotuberculosis and asbestosis.

**Silicosis.**—Silicosis is that form produced by the action of silicon dioxide or certain silicates, resulting in the formation of fibrous tissue, usually in whorls from 2 to 5 mm. in diameter, along the course of the lymphatics from the hilus outward toward and including the lung parenchyma. As a result of researches of Stuart,<sup>8</sup> Simson,<sup>9</sup> Mavrogordato,<sup>3</sup> Gardner,<sup>1</sup> Kettle,<sup>2</sup> Policard<sup>10</sup> and others, we are able to outline the general course of events in the development of the disease. At present the action is viewed as that of a toxic irritant. Whether it is a direct poison as a result of some physical surface phenomenon acting on the cells or an indirect one due to the solubility of the silica has not been established. Heffernan<sup>11</sup> has proposed a theory that visualizes the solution of the silicon dioxide into silicic acid, which in turn dehydrates or denatures the

disease depends on the location and number of these nodules, as already cited.

**Silicotuberculosis.**—After the entrance of the tubercle bacillus into a silicotic process, the character of the silicotic nodule changes depending on the time of appearance of the infection and the dosage of bacilli. If the infection is only recent, many of the nodules may be typically silicotic and intact, and the distribution more classic; but the longer the tuberculosis exists as a widespread process the fibrils of the whorls become blended into one mass and the whole nodule gradually takes on the appearance of a caseous nodular tubercle. Most of the cases encountered in industry fit into this group, because the tubercle bacillus is usually responsible for the termination of most cases of silicosis. Instead of the soft round or oblong shadow of from 3 to 5 mm., the nodules become larger and much denser, owing to the caseation with the gradual accumulation of calcium as the process progresses, until they become large masses or ulcerate into cavities. As the process advances it becomes more and more like a tuberculosis, until the roentgenograms are typical of this disease. Another variation due to tuberculosis is the atypical

8. Stuart, W.: Internat. Labor Off., ser. F., No 13, 1930, p. 9.  
9. Simson, F. W.: Symposium, Proc. Transvaal Mine Medical Officers' Assn. (special suppl.), 10: 44, 1931.  
10. Policard, A.: Presse med. 41: 89 (Jan. 18) 1933.  
11. Heffernan, P.: Tubercle 11: 61 (Nov.) 1929.



location of the lesions. If there is a benign tuberculosis already present, the process tends to become more exaggerated in the regions of the tuberculous lesions. Sometimes the location is confined to the upper half of the lungs and not at all like the classic distribution. In addition to the usual bilateral distribution of bronchogenic seeding, a hematogenous seeding usually confined more to the upper parts may also help to explain some

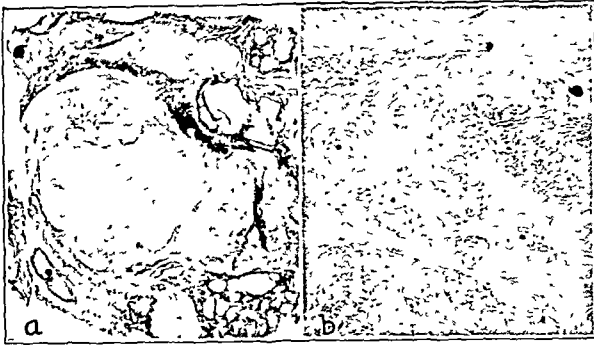


Fig. 2 (case 1).—*a*, large silicotic nodule (marked by arrows in figure 1) undergoing tuberculous caseation. *b*, a silicotic nodule without tuberculous, for comparative purposes (hematoxylin and eosin stains; reduced from a photomicrograph with a magnification of 8 diameters).

of these anomalous localizations and more particularly the benign forms with no tubercle bacilli in the sputum. Sometimes the involvement is unilateral, and sometimes it is even situated along a single bronchial ramus.

In addition to the variations in the lung parenchyma, there are changes in the lymph nodes that are of characteristic nature. Here there is an infiltration of calcium underneath the capsule, which suggested the use of the term "egg-shell calcification" in an earlier work.<sup>4</sup> The first three cases represent some of the variations caused by an associated tuberculosis:

**CASE 1.**—A Yugoslavian, aged 46, who had worked for eighteen years with a drill as a rock miner but left the mines when he was 38, had always been well until he had an attack of pneumonia in 1927, another in 1929, and a third in 1931. Physical examination when he entered the sanatorium in March 1932 revealed the following: The general development was good but he was slightly asthenic and there was a coarse tremor of the fingers. Examination of the chest revealed a slightly cyanotic skin surface and a heaving respiration; an increased tactile fremitus on the right and left base, posteriorly; an impaired resonance on the left upper third, moist râles at the left base, with cavernous breathing above. The diagnosis was far advanced B. Because special culture and guinea-pig inoculations were positive but direct smears were always negative, pneumoconiosis was suspected.

Roentgenologic examination, March 15, disclosed that the apexes were hazy, the diaphragms could be faintly seen, the costophrenic angles were not well shown, and the cardiac shadow was displaced to the left. Scattered throughout both parenchymal fields were marked areas of mottling that involved

the parenchyma out to the periphery and apex (fig. 1 *a*). Pneumoconiosis was suspected. The postmortem roentgenogram showed a large number of nodules out from the hilus and diminishing toward the periphery (fig. 1 *b*). These nodules varied in size and density from 2 to 10 mm. in diameter. They were usually round or oblong, and the larger ones seemed to be much denser than the others. The lymphatic nodes were all outlined by a faint shell-like calcification which is peculiar to silicotuberculosis.

There were numerous large slate and yellow gray nodules throughout the midportions of both lungs and some toward the apexes (fig. 1 *c*). These nodules were tough, like cartilage. The main lymph nodes out from the hilus, along the bronchi, were enlarged and a gray black with some streaks of yellow. Some of these nodes were dense and calcareous, and some of the nodules toward the base showed signs of softening.

Microscopically the lymph nodes all showed solid masses of old whorls of fibrosis, typical of silicosis. There was also a definite calcification, particularly around the borders, and a marked tendency to caseation in the centers. These lymph nodes were those which appeared on the roentgenogram. Some of the lesions showed a gradual transition from these silicotic nodules over the typical caseous tubercles (fig. 2 *a*). There was a considerable amount of emphysema throughout and a moderate amount of perivascular lymphangitis of fibrous nature.

This appeared to be a silicosis on which tuberculosis had gradually been superimposed. The important feature is that the silicotic nodules that became tuberculous seemed to increase in size and density on the roentgenogram in proportion to their tuberculization.

**CASE 2.**—An American, aged 39, had been a lead and zinc miner for fourteen years and had been out of the mines for five and a half years. The history was furnished through the courtesy of Dr. Jesse E. Douglass of Webb City, Mo. The onset of the disease occurred in 1929, when he noticed pains in the right lower side of the chest. The condition was diagnosed silicosis in September 1933 on admission to the hospital.

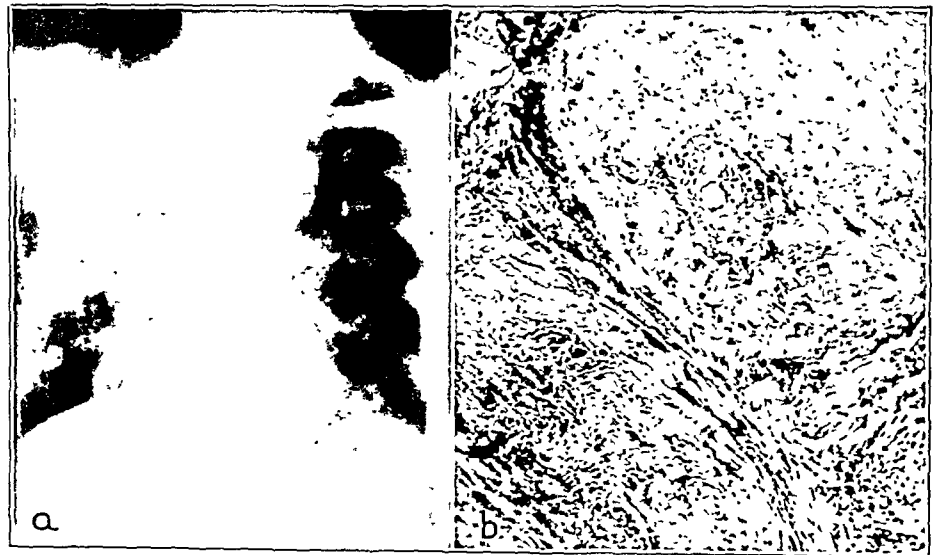


Fig. 3.—*a*, advanced silicotuberculosis with a marked unilateral aspect. *b*, section from the base, showing the character of the fibrosis; reduced from a photomicrograph with a magnification of 200 diameters; hematoxylin and eosin stains.

A physical examination Nov. 14, 1934, revealed on the right impaired resonance to the fourth rib and sixth dorsal spine, increased whispered voice to the third rib and dorsal spine, and bronchovesicular breathing to the bases. On the left there was impaired resonance to the third rib and sixth dorsal spine, increased whispered voice to the second rib and the sixth dorsal spine, bronchovesicular breathing to the base anteriorly and the third dorsal spine to the base posteriorly, coarse râles to the base anteriorly, and medium râles to the sixth dorsal spine.

The diagnosis was tuberculous infiltration throughout both lungs with probably some silicosis. The sputum was always positive for tubercle bacilli.

A roentgenogram taken Sept. 19, 1933, revealed a rather uniform nodulation out from the hilus on both sides. Many of the nodules were fairly typical of silicosis in size, contour and density. Others were larger, more dense or irregular. There was a huge cavity in the right upper and a smaller cavity in the left upper lobe. A picture taken fourteen months later revealed a spread of the ulcerative disease and an enlargement of the cavities in the left upper lobe. There was a marked contraction of the process upward, a fusion of many of the nodules, and in general more the appearance of a fibroid tuberculosis. At this time there was little resemblance to a silicosis.

An autopsy revealed a red gray lung with many firm pigmented hilus lymph nodes, one of which had ulcerated through the esophagus above the tracheal bifurcation, and two other areas on the lining showed some swelling and redness. There was a bilateral obliterative pleuritis. The heart had a definite erosion at the extreme apex in the visceral pericardium. The peritoneal cavity contained about 3,000 cc. of clear, straw-colored fluid. There were several large and small mucosal ulcers in the cecum. The liver was covered with a whitish

the last thirteen years, stated that he had been well until April 1932, at which time a cold and cough developed. He went to a doctor, and a diagnosis of tuberculosis was made because of positive sputum and roentgenologic evidence. There had been no contact with tuberculosis.

On examination the chest was emphysematous and barrel shaped, with retracted apexes and a flaring costal arch. There was impaired resonance in both upper lobes but hyperresonance below. There were râles in both upper lobes and in the base on the left side. There was a large cavity in the right apex. A diagnosis was made of pulmonary tuberculosis, far advanced B, with cavitation in the right, and pneumoconiosis.

A roentgenogram revealed a massive tuberculous process in the right upper and middle lobe, with ulceration and contraction (fig. 3). The aorta and trachea were pulled over. The right base and the whole left lung contained an increase in the peribronchial densities. There were many soft, flaky densities, irregular in outline and confluent in places, that resembled an acute infectious process. There were a few nodules, but they always varied a great deal in size and density. There was nothing to suggest silicosis.

The lung and pleura revealed much coal pigment. There was a large cavity in the right upper lobe which extended through the septum and into the lower lobe. There were a few cavities



Fig. 4.—a, appearance in a patient with a pure anthracosis. b, bronchiectasis, an old right apical tuberculosis, and a terminal pneumonia as viewed roentgenographically after death. c, lateral section through the bronchi of the gross specimen, revealing bronchiectasis and extreme pigmentation.

and apparently organized exudate. There was a very marked enlargement and pigmentation of the pericardial, biliary and peripancreatic lymph nodes.

The postmortem roentgenogram revealed a bilateral fibro-ulcerative tuberculosis in both upper lung fields, with many small nodules in the base that were compatible with but not typical of silicosis. They could easily pass for nodular tubercles.

In the right lung there was a large fibroid cavity with vessels crossing it, filling the whole upper lobe. In the base there were numerous silicotic nodules with not a great deal of coal pigment. The hilus nodes were a mass of fused fibrous silicotic masses that had impaled the vessels and esophagus into a rigid mass. There were several pulsion diverticula in the esophagus due to adhesions of the lymph nodes. In the left upper lobe were several irregular cavities and large numbers of silicotic tubercles. In the lower lobe these nodules became smaller and fewer.

The microscopic picture here revealed the usual type of silicotic tubercle with a chronic fibroid tuberculosis. As the process became advanced, it appeared more and more like a tuberculosis. Without the earlier roentgenogram, the history and physical examination, an antemortem diagnosis of silicosis would have been risky, if not impossible.

CASE 3—An Austrian, aged 60, who worked as a molder for thirty-five years but had been away from this occupation for

in the left upper lobe. Many nodular masses were present throughout the whole right lower and middle lobe and the left lung, which were peculiarly fibroid in character. There was nothing to suggest a silicosis.

On microscopic examination of the lymph nodes at the hilus there were masses of phagocytes full of black pigment. There was some autolysis, leaving open spaces. There were occasional patches of hyalinized fibrous tissue throughout both lungs, but not in whorl formation. The perivascular lymphatics were packed with black and brown pigment in the cells and free. Some of the masses were from 2 to 7 mm in diameter, and some were in confluent masses from 1 to 2 cm. across. They were rarely circumscribed as a typical silicotic nodule but on irregular masses of phagocytes that have originally filled the lymphatics to overflowing and have changed to fibrous tissue in situ.

Chemical analysis revealed 2.7 mg. of silica per gram of dried lung, definitely over the normal range.

This case illustrates what appears to be a non-nodular silicotic fibrosis and tuberculosis situated chiefly unilaterally. It should emphasize some of the limitations of roentgenograms of pneumoconiosis in the presence of tuberculosis.

*Asbestosis.*—Although the destructive types of pneumoconiosis are perhaps not all yet known, there seems to be good cause to list asbestosis as an entity under the general heading. This has been made possible by

the pioneer work of Cooke,<sup>12</sup> Mereweather,<sup>13</sup> Gloyne<sup>14</sup> and others. As the asbestos fibers are usually from 100 to 200 microns in length, they rarely reach the alveoli but lodge in the bronchioles. A few fibers pass into and through the wall of the bronchiole, causing a focus of involvement in and around the bases of the finer bronchioles. The pathologic disorder is not a nodule as in silicosis but more a diffuse fibrous lobulitis. The process extends out from the hilus toward the base. After a period of two or three months in the body the fibers appear to be acted on by the tissue juices, producing peculiar club-shaped "asbestos" bodies, which can be seen in the sputum or tissues. As the process begins the lesions are small and they may not be visible on the roentgenogram. Owing to the large numbers of them they become superimposed and present a finely stippled or ground glass appearance. There is a gradual darkening of the film passing out from the hilus. While asbestosis is not so prone to become tuberculous as silicosis, it does possess this hazard. According to Gloyne,<sup>14</sup> about 48 per cent become tuberculous. There is ample reason, therefore, to add to the grouping a tuberculous asbestosis, if the occasion ever demands.

#### CONIOLYMPHSTASIS

The second main group includes only dusts that act principally by blocking the lymphatics until their normal physiologic function is so impaired that normal resilience is lost, lymph drainage is impaired, and acute infections readily occur. Perhaps the most classic illustration of this was given by Zenker<sup>15</sup> in 1867 in which a woman had worked in a room of English red (red oxide of iron). Coal dust has a similar effect. In the pure inert dusts there is rarely any fibrosis, especially nodules or whorls. The dust is phagocytized and owing to the activity of the phagocytes much of it is expelled; some, however, passes into the lymphatics and up toward the hilus. In the worst types the lymphatics are completely blocked and are essentially functionless.

CASE 4.—A Pole, aged 45, was a coal miner for twenty years. There was nothing else pertinent in his early history. He had been troubled with a cough, productive in nature and associated with a pain in his chest and dyspnea on exertion for fifteen years. On admission to the sanatorium his blood pressure was 118 systolic, 68 diastolic. His chest was rather flat, expansion was limited, the respiratory movements were short and rapid, and the diaphragmatic excursion was poor. The percussion was dull over the lower lobes; auscultation revealed short and harsh breath sounds; there were rough breath sounds over the entire chest, and râles in both bases. The diagnosis was moderately advanced tuberculosis with pneumoconiosis and a suspected bronchiectasis.

The roentgenologic examination, April 7, 1928, revealed hazy apexes, a regular diaphragm, and slightly obliterated costophrenic angles. The cardiac shadow was dimmed by the haziness that involved both fields. There was a fanning out of small, irregular, soft, flaky densities on both sides at the hilus. For this reason anthracotic pneumoconiosis was suggested instead of silicosis (fig. 4 a). The postmortem roentgenogram in addition revealed an acute pneumonic infiltration in the base of the right upper lobe, a small quiescent tuberculous focus in the right apex measuring 2 cm. across, an old primary complex at the left base and hilus, and a fusosaccular bronchiectasis of all the basilar bronchi (fig. 4 b). The Wassermann reaction was positive and the sputum negative for tuberculosis. White blood cells numbered 13,750, and other signs were essentially negative.

In the lungs there were thrombi of several branches of the pulmonary artery; a bronchiectatic cavity in the base of the right upper and in the base of the middle, and many in the base of both lower lobes; a healed primary tubercle in the base of the left lower lobe; a small fibroid tuberculous cavity in the right apex; a pneumonic consolidation of the lower part of the right upper lobe with necrosis and cavity formation, and a dense, even distribution of coal pigment throughout (fig. 4 c). On microscopic examination these changes were confirmed. In addition there was a marked emphysema; the lymphatic vessel and lymph follicles were packed with phagocytes containing black pigment, and the alveolar walls were dotted with fine pigment particles. The various microscopic features are illustrated in figure 5 a and b.

#### CONIOTOXICOSIS

The third group is somewhat apart from the other types in that the irritants affect the tissues directly or after a period of sensitization to a specific protein. Most of these are acute processes such as a bronchitis or a pneumonitis. The reports of Cadham<sup>16</sup> on wheat rust and Figley<sup>17</sup> on castor bean dust apparently belong

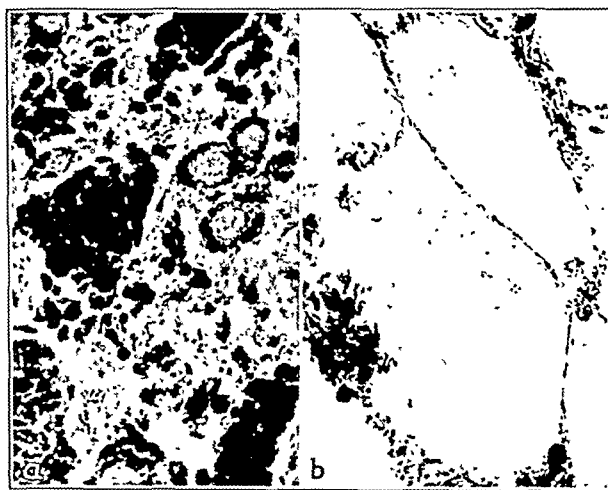


Fig. 5.—a, section of a markedly pigmented portion of lung shown in figure 3, showing the marked accumulation of pigment in the perivascular lymphatics and lymph spaces. b, pigment in the alveolar walls (hematoxylin and eosin stains; reduced from a photomicrograph with a magnification of 450 diameters).

to this group. The roentgenographic appearance of these types has been shown by Towey and his associates<sup>18</sup> in patients exposed to spores of a fungus, *Coniosporium corticale*. The shadows revealed a distribution similar to uncomplicated silicosis, but the lesions were soft and irregular and conformed to the acini similar to an acute bronchogenic spread of tuberculosis. The disease disappeared when the patients were removed from the environment.

It is conceivable that any organic dust may produce a similar type of pneumonitis. In addition, direct irritants and caustics may be included in the same category.

#### MIXED PROCESSES

There are actually few people with pneumoconiosis who have not been exposed to a mixture of two or more dusts. Some dusts are composed of substances

12. Cooke, W. E.: Brit. M. J. 2: 578, 1920.

13. Mereweather, E. R. A.: Tubercle 15: 69 (Nov.), 109 (Dec.) 1933, 152 (Jan.) 1934.

14. Gloyne, S. R.: Tubercle 14: 445 (July), 493 (Aug.), 550 (Sept.) 1933.

15. Zenker, F. A.: Deutsches Arch. f. klin. Med. 2: 116, 1866-1867.

16. Cadham, F. T.: Asthma Due to Grain Rusts, J. A. M. A. 83: 27 (July 5) 1924.

17. Figley, K. D., and Elrod, R. H.: Endemic Asthma Due to Castor Bean Dust, J. A. M. A. 90: 79 (Jan. 14) 1928.

18. Towey, J. W.; Sweany, H. C., and Huron, W. H.: Severe Bronchial Asthma Apparently Due to Fungus Spores Found in Maple Bark, J. A. M. A. 99: 453 (Aug. 6) 1932.

like granite in which there are several silicates as well as silicon dioxide present. Others are inert, as coal and iron. Dusts in coal mines are composed of carbon and a variety of other substances including silicates and silicon dioxide. Occasionally in bituminous coal miners there is no fibrosis, as shown in figure 5. When the practice of rock dusting was carried out to prevent explosions from the carbon dust, silicosis occurred much more frequently in coal miners. In most coal miners there is a mixed process that has been termed by Cummins<sup>19</sup> anthracosilicosis. Naturally the manifestations vary with the particular locality, but in general there is a rapid accumulation of carbon with a gradual development of silicosis. The silicosis seems to be greatly retarded by the coal dust, as suggested by Cummins,<sup>19</sup> Sampson<sup>20</sup> and others. The roentgenogram is at first that of an increase in the thickness of the hilus lymph nodes and an increase in the "arborization"—thickening in the peribronchial and perivascular lymphatics due to the dust. Later nodules begin to appear in the parenchyma, which vary in size

a gradual development of dyspnea with a fairly persistent cough and occasional expectoration. Jan. 14, 1928, he was admitted to the hospital with a diagnosis of silicotuberculosis.

A physical examination revealed on the right an increased whispered voice to the second rib and the third dorsal spine, and bronchovesicular breathing to the third rib and sixth dorsal spine. On the left there was increased whispered voice to the second rib and the third dorsal spine, bronchovesicular breathing to the second rib and sixth dorsal spine, and a few medium râles to the base, anteriorly.

The roentgenographic studies extended over a period of nearly seven years and revealed the development of the large tumor-like masses. The interesting feature of these cases, especially this one, was that there were no classic signs of silicosis. The shadows appeared as loosely hanging clouds, at first filling the greater part of both upper lobes. The margins of these cloudy areas were irregular. They passed downward toward the middle of the lungs as small foggy festoons. Toward the base on the right the cloudy patches became smaller and disappeared entirely at the beginning of the lower third. On the left they followed the bronchi almost to the diaphragm, but became smaller and more scattered (fig. 6 a). The principal change over the seven years was an increase in the density of the shadows of the upper lobe out to the ribs and a marked



Fig. 6.—a, silico-anthracotuberculosis, March 29, 1928. b, appearance six years later. c, lateral section of lung showing typical tumor-like masses.

from a few millimeters to many centimeters. These tumor-like masses seem prone to appear in certain mixtures of inert dust and silicon dioxide, with or without tuberculosis. The inert dust (coal, iron and the like) seems to alter the circulation in the tissues so that a partial atelectasis results, to be followed by fibrosis, resulting in fibrous tumor, composed of fibrous tissue with phagocytes laden with dust in between the fibers. In the ordinary coal miner with low silica the terminal condition is usually bronchitis or pneumonia, but in the lead and zinc miners of the Ozarks, where the carbon pigment in the quartz is low compared to the silica, the result is a moderate anthracosis with a strong silicotic tendency. Sooner or later they are usually contaminated with the tubercle bacillus. The type of roentgenogram of these patients was first shown by Childs,<sup>21</sup> and the pathology has been described in earlier work from this laboratory.

CASE 5 (also furnished by Dr. Douglass).—A man, aged 62, a lead and zinc miner who had worked as such for seventeen years, had been out of the mines for eight years before his death. He had one brother and one sister who died of tuberculosis. For two or three years prior to 1927 he had noticed

thinning out at both bases, owing to emphysema. On the left the massive shadow began to shrink inward toward the mediastinum, leaving a sharp border of the shadow made by the outer border of the upper lobe (fig. 6 b).

After three years of alternate illness and well being, the patient began to fail permanently. In the fall of 1932 he had paroxysmal attacks of cardiac fibrillation, which became persistent during the following winter. Early in the spring of 1933 the heart was digitalized and was kept so until death. During the seven years of observation the physical signs in the chest on fifty-three examinations showed no changes. Sixty specimens of sputum were negative and three were positive for tubercle bacilli. He was found dead in bed in January 1935, presumably of cardiac failure.

A postmortem roentgenogram revealed a huge black mass in the right upper lobe, a smaller one in the apex of the right lower lobe, a large one in the left upper lobe and many small masses in an emphysematous base. There were several semicalcified masses in the hilus and bronchial lymph nodes from 1.5 to 2 cm. in diameter. An autopsy performed by Drs. William M. Kinney and Raymond Kuhn revealed that the tracheobronchial glands were large and black, as were those just below the diaphragm about the cardiac end of the stomach, the peripancreatic and the mesenteric. Suggestive small black areas were found in the spleen and possibly some macroscopic areas in the liver.

In our examination of the lungs the whole right upper lobe was black, fibrous and slightly contracted with an early excavation in the center, measuring between 2 and 3 cm. The diam-

19. Cummins, S. L.: *Lancet* 1: 235 (Jan. 13) 1931

20. Sampson, H. L.: *Silicosis Symposium*, Saranac Lake, N. Y., 1934

21. Childs, S. B.: *Bull. U. S. P. H. S.*, 1917, p. 31

eter of this black mass was about 12 cm. There was a large black nodule in the apex of the right lower lobe measuring from 3 to 4 cm.; a large mass out from the hilus in the left upper lobe extending along the left subapical bronchus, measuring 5 by 7 cm.; small fibrotic nodules throughout both bases, and large calcified masses in the hilus lymph nodes (fig. 6 c). The microscopic appearance has been well shown in former work, previously cited.

Chemical analysis revealed 6.3 mg. of silica per gram of dried lung.

Judging from the period of time we were able to follow this patient, it may be assumed that this condition was forming over a period of twenty or more years. It was apparently the result of a silica exposure with a moderate carbon pigment contamination on which slowly developing tuberculosis was superimposed.

#### SUMMARY

1. A correlation of the antemortem and post-mortem roentgenograms with the pathologic changes has been attempted in various unclassified types of pneumoconiosis.

2. Tuberculosis with silicosis renders a roentgenographic examination difficult or impossible in the majority of patients affected with silicosis, because of atypical characteristics or the location of the lesions. The localization resulting from tuberculosis may be predominantly that of a hematogenous tuberculosis, situated bilaterally in the upper parts of both lungs, of a bronchogenic spread bilaterally, or of a bronchogenic spread unilaterally, and even along a single bronchial ramus.

3. The involvement of the lymph nodes are quite characteristic, forming what have been termed "egg-shell" calcifications.

4. Pneumoconiosis, resulting from a lymphatic congestion due to coal, iron, and the like differs from silicosis and silicotuberculosis sufficiently that an involvement by such inert dust may be anticipated many times on the antemortem roentgenograms.

5. When the inert dusts are combined in some yet undetermined proportions with a silicosis or a silicotuberculosis, it seems to result in a complex that possesses a variety of bizarre formations, some of which simulate single or multiple neoplastic masses on the roentgenograms.

North Pulaski Road and Bryn Mawr Avenue.

**The Early Diagnosis of Pneumonia.**—To make an early diagnosis is often to win half the battle in a case of serious illness, for as a rule treatment only fails because it is not administered sufficiently soon. Take, for instance, early pneumonia. In this disease there may be no chest signs to commence with, except widespread pain, but there are, I think, three signs which, if present, enable one to make a definite diagnosis and so to free one's mind of the incubus of the unknown. The first is the working of the nostrils, which is present even when there may be no very obvious respiratory embarrassment; and it is a sign which the best of physicians I have met, the late Dr. Ogle, continually impressed upon his clerks. The second is a pungent burning skin, which is immediately felt by the trained hand, and which may exist in the absence of a very high temperature, and for which I have never heard any adequate physiological explanation. And the third is the complete absence of chlorides from the urine. These three signs form a valuable trinity to remember, for the more one practices physic the greater is the realization that one physical sign is worth half a dozen symptoms.—Howard, Christopher: *The Art of Medicine, Lancet* 1:754 (March 28) 1936.

## INTESTINAL OBSTRUCTION DUE TO AMEBIASIS

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As is well known, *Endamoeba histolytica* is an invading parasite living in and subsisting on the tissues, most often in the material found in and beneath the mucous membrane of the colon. Usually the pathologic condition noted is moderate thickening of the mucosa with surface ulcerations. In practically all cases antiamebic treatment causes a rapid reduction of the disorder, this often being one of the striking phenomena noted in the treatment of this disease. In such instances one commonly observes a complete reduction of the pathologic manifestations, the patient being apparently well, and yet cysts may continue in the stools, patients proving themselves capable hosts in maintaining both themselves



Fig. 1.—Roentgen appearance, Sept. 16, 1935.

and their amebic guests in comfort. Sometimes in these instances, with whatever antiamebic treatment and how many times carried out, *Endamoeba histolytica* cysts continue to be present and thus the potential of recurrence of clinical symptoms is always present. In the majority of instances when well treated, the disease is permanently cured and the stools continue to be negative to both the vegetative organisms and the cysts. In those in which continued negative stool examinations are not accomplished, for obvious reasons, periods of antiamebic treatments should be carried out. No case should be considered cured without two criteria being present: first, negative stools for cysts for at least six months and, second, x-ray examinations that show a normal colon. The latter to me is the most important because negative stools may be encountered, yet the x-ray examination shows the presence of lesions. Proctoscopic examinations may be added to these but are not to be depended on clinically. This is because the disease involves the rectum with manifest lesions in only 25 per cent of the instances, and even when they have disappeared cysts may be present, and the symptoms of the disease often recur.

A man, aged 50, with a nonsignificant family and personal history, was referred by Dr. Costello of Dover, N. J., for the diagnosis of abdominal cramps of one month's duration, severe enough to have kept him in bed for three weeks and only slightly benefited by treatment. Occasionally there was blood with the movements, for which laxatives were required, and after which there were three or four days of loose movements with more noticeable blood. At the first visit he gave the history of having been in Chicago during the pandemic of



Fig. 2.—Roentgen appearance, January 1936.

amebiasis and having stopped at the Congress Hotel about eight weeks before the onset of the abdominal cramps.

The examination, Nov. 3, 1933, disclosed a generally tender abdomen, mostly in the sigmoid region, a generally inflamed rectal mucosa with small, whitish areas, one of which showed the presence of the vegetative forms of *Endamoeba histolytica*, the Cleveland medium culture also being positive.

He was placed on chiniofon, developing more severe cramps the first three or four days, and made a symptomatic recovery, the stools becoming negative to endamebas and cysts on direct and culture examinations in several specimens from Nov. 20, 1933, to Jan. 30, 1934. Two months after the treatment the patient looked and felt well and had gained 30 pounds (13.6 Kg.). In monthly examinations of his stools after January 30 an occasional histolytica cyst was encountered. Having had a slight intestinal upset for several days in June 1934 he was put on a full course of carbarsone, after which the stools were negative for cysts until September 1934, when, after three days of abdominal cramps and slight looseness of the bowels, the stools were again positive to the vegetative organisms and he was put on a full course of vioform. He was not seen again until Sept. 10, 1935, one year after the former visit, when he complained of constipation that had been developing slowly over about a week's time, but which he could control by simple laxatives. No examination of the stools had been made from September 1934, the patient considering himself cured. He was reestablished on vioform and given laxatives. Two days after his last visit he left for Chicago, having had no bowel movement in the meantime. He was operated on for complete intestinal obstruction with fecal vomiting, September 17, in the Presbyterian Hospital in Chicago by Dr. H. A. Oberhelman, who sent the following report, briefly expressed:

"He was operated on as an emergency for intestinal obstruction. We, however, had occasion to do a proctoscopic examination and a colon fluoroscopy and found a definite annular obstruction at the rectosigmoid junction. At operation this

was verified as a complete, firm, annular neoplasm and I noted the entire colon thickened from hypertrophy. The abdomen was markedly distended, the distention involving the entire colon and ileum. Free but turbid fluid was found in the peritoneal cavity and the sigmoid colon and peritoneum. The peritoneum was dull from shreds of fibrin. A cecostomy was done and several specimens of stool were cultured but none were positive for amebas. He continued to improve for two weeks, when suddenly he began passing some blood and pus from the rectum. The feces were found to be full of amebas. Vigorous antiamebic treatment was instituted with emetine, to which he responded. Five weeks after his operation, while under treatment, his abdominal wound became larger, inflamed looking and started to slough. Examination of material from the edge of the wound was positive for amebas, which promptly responded to applications of chiniofon solution and irrigations of chiniofon through the wound. He has practically recovered except for his neoplasm, which we will be obliged to remove surgically and it will entail a combined abdominoperineal resection."

During his stay in the hospital two x-ray examinations were made. The film of September 16 (fig. 1), before antiamebic treatment was instituted, shows a mass at A, strictured section at B (which probably was the site of occlusion), and general involvement of the descending colon above it, this also involving all of the sigmoid. The x-ray examination of November 8, after about ten days of antiamebic treatment, showed a reduction of the mass at the distal portion of the sigmoid and improvement of the strictured and intervening portion.

Dr. J. W. Foster reported that the patient was taking vioform when first seen, September 14, and took 1 grain (0.06 Gm.) of emetine for four days and 3 grains (0.2 Gm.) of carbarsone for eleven days, 2 grains (0.13 Gm.) for fourteen days and

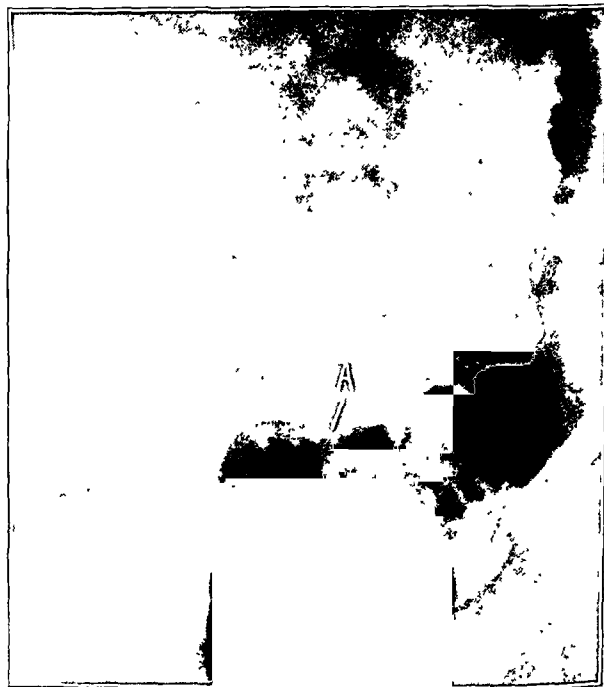


Fig. 3.—Roentgen appearance, March 1936.

3 grains for ten days. November 25, emetine, 2 grains for two days and 1 grain for seven days, and 3 per cent solution of chiniofon was applied to the colostomy for sixteen days, three tablets daily for five days, a retention enema of 200 cc. of 2 per cent solution through the colostomy for two days and 100 cc. for three days. Stools were negative for amebas for some time (four straight specimens).

December 16 he again came under my observation. He stated that he had gained from the low point of 90 to 115 pounds (41 to 52 Kg.), the bowels moving about every thirty-



six hours, with fairly normal stools. Proctoscopic examination disclosed slight congestion of the upper part of the rectum and a thickened, granulomatous looking mass in the lower sigmoid (impassable). Roentgenograms showed a much more normal looking sigmoid than the former films, the descending colon was apparently normal, with no strictured sections (not seen in after-defecation films), and a possibility of a strictured state at A (fig. 1). Stools showed a few cysts. The patient was placed on 1 grain of emetine a day for ten days and chiniofon, full course, with vitamin B and diet regulations similar to types used in pernicious anemia.

At the next visit, Jan. 20, 1936, on proctoscopic examination, no lesion or pathologic condition was observed; the stools were negative for amebas and cysts, with cylindric stools; the patient felt perfectly well; roentgenograms showed a more normal sigmoid with still a suggestion of stricture at the distal portion, but judged by the large cylindric bowel movements each day and the normal caliber of this section in the after-defecation enema films, it was judged as of no significance. He weighed 129 pounds (58.5 Kg.).

When seen on February 6 he had not been taking antiamebic treatment for three weeks, and he felt well, still weighed 129 pounds and the stools and culture were negative. Examination of the blood revealed: red blood cells 4,270,000; hemoglobin 92 per cent; white blood cells 7,200, with the percentage of neutrophils 71, lymphocytes 20, mononuclears 6; eosinophils 1, basophils 2. Because of the history and the persistence of an ironed-out appearance and some irregularity in the rugae of the sigmoid, a course of 1 grain (0.06 Gm.) of emetine for ten days and a full course of chiniofon was reestablished. Roentgenograms, March 2, showed a marked improvement in the entire colon, definitely also in the sigmoid, with no appearance of the strictured state at the rectosigmoid junction, as noted on the clysmas and evacuation films. Rugae at that point were normal. The case, however, is resisting antiamebic treatments of all kinds and will require persistence with them from time to time. This is important, too, in connection with the eventual possibility of carcinoma. Films taken up to April 1936 show the strictured condition to be normal, but the transverse colon is still abnormal.

Cases of partial degrees of obstruction in amebic inflammation of the cecum and ascending colon are not uncommon, but occlusion distal to the middle of the transverse colon is most rare. In the case mentioned, the obstruction occurred in the sigmoid and was due to pathologic changes in the sigmoid walls. Most of the cases of partial obstruction are due to occlusion states in the right colon, healing leaving scar tissue, peritoneal adhesions, pressures of postcecal abscess or hepatic abscess of larger size pressing on the intestine. These with the other sequelae are noted in the chronic case. The time from the infestation to complete obstruction in this case was about twenty-two months, with three courses of antiamebic treatment in the meantime and the patient on vioform at the time of obstruction.

Complete intestinal obstruction due to enteric involvement above and localized in the sigmoid has not been disclosed in a search of the literature of the library of the New York Academy of Medicine. Several authorities have recorded instances of partial obstruction, notable among which are Sambuc,<sup>1</sup> Sellards,<sup>2</sup> Grall,<sup>3</sup> Dobell and Low,<sup>4</sup> Spangenberg,<sup>5</sup> Vergoz and

Hermenjat-Gerin,<sup>6</sup> Craig,<sup>7</sup> and Reed and Anderson.<sup>8</sup> Desjardins<sup>9</sup> calls attention to masses consisting of a true neoplasm of amebic origin or to an inflammatory mass secondary to an amebic ulcer or to an amebic ulcer alone being mistaken for carcinoma. He describes a patient with partial obstruction showing a hard, irregular mass with filiform narrowing, the clinical picture being that of cancer but due to inflammatory products of an ulcer plus spasm. Gunn and Howard<sup>10</sup> report three cases of amebic granulomas simulating cancer, the pathologic manifestations consisting of "isolated, chronic ulcer with progressive erosion of the wall of the bowel." They draw attention to the symptoms, physical signs and x-ray appearances being identical with carcinoma and the rarity of the condition. Rogers<sup>11</sup> refers to two cases of supposed carcinoma in which amebas were found and which were cleared up by emetine treatment. Reed and Anderson<sup>8</sup> mention having seen three cases in which definite tumor masses were found in the colon, but in none was the mass isolated (as it was in the case here reported). They draw attention to the significance of extension of the lesion to various parts of the colon as strongly against a diagnosis of cancer (such was the fact in this case). Gunn and Howard,<sup>10</sup> Hines,<sup>11</sup> and Reed and Anderson<sup>8</sup> draw attention to the coexistence of amebiasis and cancer, regarding which Reed and Anderson state that chronic amebiasis affords an excellent background for the development of cancer as a sequela and report four such cases. They draw attention to the importance of handling cases of amebiasis as a prevention of possible carcinoma, especially to lesions in the sigmoid and rectosigmoid regions. This is especially interesting in connection with the case reported, because, while the strictured state that caused the obstruction was in the upper portion of the sigmoid and entirely subsided under treatment, there was a granulomatous mass also in the rectosigmoid junction, which seems to have left an effect on the caliber of the intestine yet which granulomatous mass totally subsided and which is not interfering with normal bowel movements. Note should also be made that in the films taken after evacuation of the barium sulfate enema this is not noted, and normal mucosal rugae are present in this area, such not being possible of carcinoma existed.

As to the possible site of obstruction due to intra-enteric occlusion, Clark<sup>12</sup> reports the following: About 60 per cent possessed ulcers more or less through the colon, while 40 per cent had a local distribution in more dependent parts of the colon and appendix. In the order of incidence, they were placed as follows: The cecum and ascending colon, the rectum and sigmoid, and the appendix. Kartulis in Egyptian cases found the following distribution of the lesions approximately: the entire large intestine involved 50 per cent of the cases; ascending colon and sigmoid flexure only 25 per cent; cecum with either ascending or descending colon

1. Sambuc, E.: Notes cliniques sur les abcès du foie au Tonkin. *Ann. d'hyg. et méd.* col. 16: 48-103, 1913; pp. 68 and 74: one case of intestinal occlusion, same case as quoted on p. 724 of Vergoz and Hermenjat-Gerin.<sup>6</sup>

2. Sellards, A. W.: Amoebiasis, in Christian, H. A.: *Oxford Medicine* 5: 799-816, 1929; p. 808, one personal case.

3. Grall, C.: Hépatite des pays chauds: Abcès endémique due foie, in Grall, Mathis and Leger: *Traité de pathologie exotique*, Paris, J. B. Baillière et fils 4: 372-605, 1920; p. 494, one case of intestinal obstruction caused by amebic hepatitis.

4. Dobell, C., and Low, G. C.: Amoebiasis, in Byam, W., and Archibald, R. G.: *The Practice of Medicine in the Tropics*, New York, Oxford University Press 2: 1342-1386, 1922; p. 1360, intestinal obstruction due to old and extensive adhesions is not unknown.

5. Spangenberg, J. J.: Sobre un caso de hepatitis amebiana dano un síndrome de occlusion intestinal a repetición. *Arch. argent. de enferm. d. ap. digest. y de la nutrición* 7: 165-184, 1931.

6. Vergoz and Hermenjat-Gerin: De la rupture des abcès amibiens du foie dans les cavités séreuses (plèvre-péritoine-péricarde), *Rev. de chir.*, Paris 51: 680-734 (Nov.) 1932; authors quote Sambuc's<sup>1</sup> case on p. 724.

7. Craig, C. F.: *Amebiasis and Amebic Dysentery*, Springfield, Ill., Charles C. Thomas, 1934, pp. 167-168; intestinal obstruction, with mention of personal cases.

8. Reed, A. C., and Anderson, H. H.: *Amebiasis and Cancer of Colon*, *Am. J. M. Sc.* 191: 237-250 (Feb.) 1936.

9. Desjardins, A.: *Les pseudo-cancers coliques d'origine amibienne*, *Bull. et. mém. Soc. chir. de Paris* 21: 443, 1929.

10. Gunn, Herbert, and Howard, N. J.: *Amebic Granulomas of the Large Bowel*, *J. A. M. A.* 97: 166 (July 18) 1931.

11. Hines, L. E.: A Form of Polypoid Colitis as a Late Stage of Amebic Dysentery, *J. A. M. A.* 81: 12 (July 7) 1923.

12. Clark, H. C.: The Distribution and Complications of Amebic Lesions Found in 186 Postmortem Examinations, *Am. J. Trop. Med.* 5: 157 (March) 1925.

or rectum 25 per cent. The appendix was involved only nine times in several hundred cases and the small intestine never.

In all instances of inflammation of the intestine, bacterial invasion of the wall exists. This is a secondary process irrespective and independent of the initial cause. This no doubt adds to the thickening of tissue, but when it is possible to control the initial cause (such as the destruction of pathologic amebas), the inflammation subsides. It is very probable that in obstructive conditions of the colon due to amebiasis the secondary infection is due to organisms of the typhoid-dysentery-coli group, together with low grade streptococci or staphylococci. Injection of the wall as noted at operation with the deposit of fibrin on the peritoneal surface indicates inflammation.

#### CONCLUSIONS

In a case of intestinal obstruction with fecal vomiting in which the occlusion was complete and occurring in the left side of the colon (sigmoid), the lesion was intra-enteric entirely and cleared up under antiamebic treatment.

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### HYPOPHYSEOTHYROGENIC ADIPOSITY AND EMACIATION

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In reporting, in the autumn of 1934, three cases of extreme emaciation of pituitary type in young girls, I<sup>1</sup> intended to draw attention to a form of morbid loss of weight heretofore but little considered and at the same time propose a method of treatment for it—medication with thyroid preparations. The syndrome is distinct, easily delimited and evidently not at all unusual. It comprises in the main—besides loss of weight—anorexia, constipation and amenorrhea, hypothermia, bradycardia, arterial hypotension and hypometabolism, as well as a tendency to hypoglycemia and prolongation of the dextrose tolerance curve. Von Bergmann,<sup>2</sup> who earlier in the same year published reports of a series of fifteen similar cases, adds to these an inclination to discomfort in the upper part of the abdomen and to an increase of the sedimentation rate of the red blood corpuscles. Two of my three cases showed definite phlebosclerosis, which disappeared entirely as the patient recovered; since then Rothmann<sup>3</sup> has recorded the same observation in one case. In all three cases the fingers were long and narrow, tapering "madonna" fingers, which may perhaps be interpreted as a tendency to acromicria. Hawkinson<sup>4</sup> has described a case with falling of the hair (pubic and axillary hair, eyebrows, eyelashes and hair on the head). The whole symptom complex is qualitatively exactly like Simmonds'<sup>5</sup> pituitary cachexia, but much milder, a Simmonds disease in miniature, reversible and without demonstrable anatomic lesion of the hypophysis.

Von Bergmann considers that there is in the first place an insufficiency of the anterior pituitary lobe, with associated disturbances in the ovaries, the thyroid

and the adrenals, often arising in connection with an overstraining of the endocrine system at puberty, pregnancy, labor and the menopause. The general asthenia with cor parvum, which is often observed in such cases and which was very prominent in all my cases, is considered by him to be a disposing factor. In accordance with this conception, von Bergmann has treated his patients with pituitary, mainly by injection or by means of transplantation, and has noted favorable results. Hawkinson and Rothmann have observed improvement during treatment with pituitary-like gonadotropic principle of pregnancy urine, and Kalk<sup>6</sup> describes a case in which the symptoms subsided during treatment with adrenal cortex extract.

#### PITUITARY ASTHENIA: PROBABLE PATHOGENESIS AND THERAPY

I<sup>1</sup> agree with von Bergmann's conception but at the same time emphasize the resemblance between the syndrome under discussion and hypothyroid conditions, with which, in all essentials, it seems to agree, except that myxedema is lacking. After one of my cases (case 2 in table) was considered by Josefson<sup>7</sup> as a psychogenic anorexia and was treated with thyroid substance, which resulted in a rapid return to complete health, I used the same treatment in my two other cases. The one improved distinctly, the other recovered completely with a weight increase of 11 Kg. in seven months and finally also a reestablishment of normal menses. The similarity to hypothyroidism and the effect of thyroid medication could be considered as indicating the decisive rôle played by the insufficiency of the thyrotropic function of the anterior pituitary in this primarily hypophyseogenic syndrome. The supply of thyroid substance would break a vicious circle by giving the adenohypophysis a chance to recover and take up again its exhausted function. Analogously, the effects of other organ preparations could be understood, such as those previously mentioned of estrogenic substance, adrenal cortex, and pituitary-like gonadotropic principle of pregnancy urine. If this theory is correct, it explains the mention in the literature on this subject of certain cases reacting better to one and others to another of the endocrine principles mentioned; the choice of preparation should depend on which of the partial functions of the anterior pituitary is most affected.

As a contrast to my cases, in which hypothyroidism and emaciation were dominating symptoms and, seemingly, a tendency to acromicria was present, I called attention to cases of thyrotoxicosis presenting a tendency to adiposity and acromegaloïd symptoms. In the former case hypophyseogenic emaciation is quite apparent; in the latter there is perhaps a distinct hypophyseogenic thyrotoxicosis, each in the main conditioned by change in the "incretion" of the thyrotropic hormone from the adenohypophysis, with deficiency in the former, and hypersecretion in the latter case. This theory seemed to be supported by the fact that two of my cases at first apparently reacted to thyroid medication with slight symptoms resembling thyrotoxicosis, before the favorable effect clearly showed.

#### REPORT OF CASE

During the progress of this work I had under observation a case which behaved in every respect quite the opposite to the condition described: a young girl in

1. Wahlberg, Johannes: Acta med. Scandinav. 84: 550, 1935; Finska läk.-sällsk. handl. 76: 1059 (Dec.) 1934.

2. von Bergmann, G.: Deutsche med. Wchnschr. 60: 123 (Jan. 26) 1935.

3. Rothmann, H.: Acta med. Scandinav. 87: 168, 1935.

4. Hawkinson, L. F.: Simmonds' Disease (Pituitary Cachexia), J. A. M. A. 105: 20 (July 6) 1935.

5. Simmonds, Morris: Deutsche med. Wchnschr. 40: 322, 1914; 42: 190, 1916; 44: 852, 1918.

6. Kalk, H.: Deutsche med. Wchnschr. 60: 893 (June 15) 1934.

7. Josefson, A.: Nord. med. tidskr. 5: 489 (April 22) 1933.

whom thyrotoxicosis and a tendency to adiposity seemed to develop simultaneously, while apparently a thickening of the finger tips had occurred at the same time. Since then the correctness of this line of thought seems to be confirmed by the development in the patient of pituitary asthenia leading to a loss of 29 Kg., which rapidly improved during thyroid medication, with an increase of 9 Kg. in one month.

A girl, aged 18 years, who had been treated with iodine for a slight goiter, showed in the spring of 1933 fatigue, tremor, sweating and tachycardia simultaneously with increase of weight. A certain puffiness round the eyes had been noticed and the finger tips seemed to have become broader than before. When examined objectively in October 1933 she showed a thyroid gland of ordinary size with a lump as large as a bean in the lower pole of the right lobe, moderate tremor, a heart rate of 120 per minute and a blood pressure of 160-140 systolic, 90 diastolic. Her weight was 80 Kg. net and her height 166 cm. The basal metabolism (Krogh) was +11 per cent calculated according to her real weight and +24 per cent according to her calculated normal weight, which was 63 Kg. She was treated in a purely conservative way with rest, diet and light sedatives. During this treatment her condition gradually improved; at home her pulse was often only about 70 per minute, but it would still rise, when examined by the physician, to 120 per minute, and the weight continually increased, attaining its maximum, 86 Kg., in December 1933.

#### *Clinical Manifestations in Four Cases\**

Patient	Age	Loss of Appetite	Constipation	Amenorrhea	Height, Cm.	Weight, Kg.	Calculated Normal Weight, Kg.	Temperature (Axillary)		Pulse Frequency	Blood Pressure	Basal Metabolism, per Cent
								C.	F.			
1.....	18	+	+	+	168	33	64	36	96.8	45	70/50	+19
2.....	12	+	+	0	174	23	59	35	95.0	48	80/60	+27
3.....	18	+	+	+	161	39	59	36	96.8	40	100/60	+37
4a.....	18	—	—	—	166	86	63	37	98.6	120	160/90	+24
4b.....	20	+	+	+	166	57	63	36	96.8	52	100/70	+25

\* Cases 1, 2 and 3 are those previously reported by the author; case 4 is the one here described, 4a being the stage of thyrotoxicosis and adiposity at its height in the autumn of 1933 and 4b the stage of pituitary asthenia at its height in the autumn of 1935. The normal weight is calculated from tables made on the basis of the material obtained from the life insurance companies in Finland.

From the beginning of 1934 the symptoms of thyrotoxicosis declined and simultaneously the weight decreased. In January the basal metabolism was +5 per cent. Calculated according to the normal weight it was +19 per cent. She had lost 1 Kg. In March she was free from symptoms, except for a labile pulse and a certain tendency to sweating; the weight had fallen to 81 Kg. The patient began to complain of increasing gastric dyspepsia, which became worse, in spite of the expulsion of an intestinal worm (*Diphyllobothrium*) and the prescription of a diet. In May 1934 excessive dysmenorrhea occurred. The basal metabolism was then +5 (+15) per cent and the weight 80 Kg. During the summer the last symptoms of thyrotoxicosis disappeared, but the dyspepsia became worse and was accompanied with growing loss of appetite and constipation. The weight continually went down and when, in January 1935, it had fallen to 65 Kg., a high caloric diet and rest were tried. In February the basal metabolism was  $\mp$  0 per cent and the weight 64 Kg. In June amenorrhea occurred too and the loss of appetite as well as the constipation became extreme. During July and the beginning of August the patient was in a sanatorium for a slight polyarthrititis, and there it was noted that her pulse was often only about 50 per minute and the axillary temperature was below 36 C. (96.8 F.). In contrast to the previous year, she was always cold. An attempt with estrogenic therapy by mouth had no effect. At the end of August 1935 the basal metabolism was -25 per cent, the rest pulse 58 per minute, the temperature 36.1 C. (96.9 F.), the blood pressure 100 systolic and 70 diastolic, and the net

weight had reached a minimum of 57 Kg. Roentgen examination now, as during the period of adiposity and thyrotoxicosis, showed a sella turcica of usual appearance.

Pituitary asthenia, which already in the spring of 1935 was thought possible, was now considered certain, and thyroid medication was started during clinical observation. The first week the patient took thyroid tablets (Burroughs-Wellcome) 0.1 Gm. and then 0.2 Gm. daily. In ten days all symptoms had improved considerably and the weight had increased by 1 Kg. After one month's treatment with the same daily dose of thyroid the symptoms disappeared completely: the appetite was good, there was no constipation and the menses were normal, the feeling of chilliness had gone, the pulse frequency was 75 per minute, the blood pressure was 130 systolic and 90 diastolic, and the weight was 66 Kg., an increase of 9 Kg. in one month. Only a slight palpitation in the evenings was noticed in the beginning of the thyroid treatment. Slight symptoms in the joints and a chronic tonsillitis were still present, and since the beginning of the polyarthrititis the sedimentation rate of the red corpuscles was slightly increased. The thyroid dose was cut down to half, and after a total duration of six weeks the medication was stopped. The weight of the patient was then 67 Kg. and, the joint symptoms excepted, she presented a picture of perfect health. The broad, seemingly acromegaloïd, finger tips have not altered.

#### COMMENT

It seems as if this case could with some reason be considered to support the theory here put forward of pituitary asthenia, its pathogenesis, symptomatology and therapy. Two completely contrasting syndromes are here found in succession in the same person: first thyrotoxicosis accompanied by pathologic fatness and then symptoms of hypothyroidism accompanied by pathologic emaciation. An analogy may be found in the well known fact that a thyrotoxicosis, by excessive hyperactivity, may lead to a functional exhaustion of the thyroid gland and to myxedema. Everything points to this in my case, being in the first place a question of disturbance in the endocrine activity of the anterior pituitary, first excessive and then defective function. In both stages the disturbance in the thyrotropic part of its function appears to be dominant. Next comes the disturbance in the fat metabolism. It seems as if this in a peculiar way compensates for the disturbance in the basal metabolism, so that an increased basal metabolism is accompanied by adiposity, and a lowered basal metabolism by emaciation. The fact that these contrasting changes in the function of the anterior pituitary are followed by complete balance in its endocrine activity with clinical health seems to show that a grave anatomic lesion in the adenohypophysis cannot here, as in pituitary cachexia (Simmonds), be the cause of the functional disturbance in this organ. The clinical appearance of the thyroid gland and the roentgenologic aspect of the base of the skull also remain normal, while the clinical picture varies in this remarkable way.

As regards therapy with thyroid substance in pituitary asthenia, in the case reported here during one month of this treatment with quite small doses a continued loss of weight, as much as 29 Kg. in about a year and a half, and associated alarming symptoms were arrested and followed by a weight increase of 9 Kg. and restored health.

#### SUMMARY

1. The case reported presents two syndromes: first adiposity and then emaciation. The main symptoms of the syndrome discussed are severe loss of weight and of appetite, constipation, amenorrhea, hypothermia, bradycardia, arterial hypotonia, hypometabolism, and disturbances of the sugar metabolism. Less constant

symptoms are epigastric discomfort and increased sedimentation rate of the red blood corpuscles (von Bergmann), falling of hair (Hawkinson), reversible phlebosclerosis, and an apparent tendency to acromicria (Vahlberg). The syndrome is qualitatively almost exactly like Simmonds' pituitary cachexia but is in every detail slighter and reversible, and there are no signs of an organic lesion of the hypophysis.

2. The theory put forward earlier, that the syndrome may be conditioned by a functional deficiency of the anterior pituitary, is supported and at the same time it is pointed out that it seems as if the thyrotropic part of the adenohypophysis function plays an important part in the pathogenesis. In support of this theory it is stated that the syndrome resembles hypothyroidism in detail, except for the absence of myxedema, and that, at least in certain cases, medication with thyroid preparations has an extraordinary effect: three of my four patients recovered rapidly and completely during thyroid medication.

3. The case here presented first showed a thyrotoxicosis accompanied with adiposity, and then changed directly to the type of emaciation discussed with prompt recovery during thyroid medication. These two clinical pictures are presented as complete contrasts: probably hypophyseogenic thyrotoxicosis with adiposity and hypophyseogenic hypothyroidism with loss of weight. Very likely the first is due to hyperfunction, the latter to insufficiency of the anterior pituitary and chiefly of the thyrotropic part of its endocrine function.

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## EFFECT OF ALCOHOL ON DIGESTION BY GASTRIC JUICE, TRYPSIN AND PANCREATIN

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In a previous study<sup>1</sup> it was found that gastric juice, trypsin and pancreatin digested insulin and that the digestion of insulin was prevented when alcohol of proper concentration and amount was added to this drug or to these enzymes. Apparently this effect was produced by the destruction of these enzymes with alcohol. It seemed that this knowledge might be of significance in interpreting the etiology of the polyneuritis or deficiency disease so often encountered in chronic alcoholic patients. Shattuck<sup>2</sup> suggested that alcoholic polyneuritis was caused chiefly by the failure to take or assimilate food containing a sufficient quantity of vitamin B. Such a view was held by Meyer,<sup>3</sup> Wechsler,<sup>4</sup> and Jolliffe and Joffe.<sup>5</sup> Similar ideas were expressed by Spies and DeWolf,<sup>6</sup> who felt that the development of pellagra in chronic alcoholism was due to loss of appetite and the substitution of drink

for food, and by Strauss,<sup>7</sup> who concluded that alcoholic polyneuritis was probably the result of dietary deficiency, possibly conditioned by disturbed gastro-intestinal function.

Since it has been suggested that there was a deficient assimilation of food or a disturbed gastro-intestinal function in alcoholic polyneuritis it appeared of value to study this problem by determining the effect of alcohol on digestion by gastric juice, trypsin and pancreatin. This paper presents some observations on this subject.

### PROCEDURE

The method of investigation was as follows: Specimens of gastric juice were obtained from a variety of nonalcoholic patients and the amount of free hydrochloric acid was determined. Each specimen was divided into two equal parts of about 10 cc. Pieces of egg albumin, which were coagulated by heating, were added to one part of gastric juice to serve as a control test. Then 10 cc. of 48 per cent alcohol and egg albumin were added to the second part. These were incubated at 37 C. and the amount of digestion was noted in six, twenty-four and forty-eight hours.

Similar tests were made with commercial powdered trypsin and pancreatin. About 0.5 Gm. of these substances was mixed with 20 cc. of water and divided into equal portions. Then pieces of egg albumin and alcohol were added as in the experiments with gastric juice and the results were noted.

### RESULTS

The results obtained in these experiments were very interesting. In the control tests with the different specimens of gastric juice there was a varying amount of digestion of the egg albumin at the end of six, twenty-four and forty-eight hours and it increased as time went on. The digestion was most marked in those specimens of gastric juice in which the free hydrochloric acid was as high as 80 and least when the free hydrochloric acid was 0. However, in the tests with alcohol the results were quite different. Here there was practically no digestion of the egg albumin even at the end of forty-eight hours. The tests were repeated by incubating alcohol and gastric juice for fifteen minutes. The alcohol in this mixture was evaporated off in vacuo at 37 C. Then egg albumin was added to the remaining gastric juice and the amount of digestion was noted. In these tests also there was no digestion of the albumin. The results suggested that alcohol destroyed the enzymes in the gastric juice.

In the experiments with trypsin the results were more striking than those obtained with gastric juice. After the egg albumin was added to the trypsin mixture there was usually marked digestion within six hours and practically complete digestion in twenty-four hours. In contrast, when alcohol was added to the trypsin there was almost no digestion even at the end of forty-eight hours.

The results with pancreatin were similar to those obtained with trypsin, although pancreatin did not produce as much digestion as trypsin. However, when alcohol was added to the pancreatin there was no digestion of albumin during the period of observation.

### PROTEOLYTIC ACTION OF GASTRIC JUICE OF ALCOHOLIC PATIENTS

As a result of the previous experiments, it was reasonable to conclude that alcohol inhibited the proteolytic activity of certain digestive enzymes in vitro. It

From the Medical Clinic of the Peter Bent Brigham Hospital.

1. Blotner, Harry: The Effect of Gastric Juice, Bile, Trypsin and Pancreatin on Insulin: The Prevention of the Digestion of Insulin with Alcohol. *Am. J. M. Sc.*, to be published; abstr., *New England J. Med.* 214: 385 (Feb. 20) 1936.

2. Shattuck, G. C.: The Relation of Beriberi to Polyneuritis from Other Causes. *Am. J. Trop. Med.* 8: 539 (Nov.) 1928.

3. Meyer, A.: Ueber der Vorkommen von B-Avitaminose unter den hiesigen Lebensbedingungen. *Schweiz. med. Wchnschr.* 62: 1243 (Dec. 31) 1932.

4. Wechsler, I. S.: Etiology of Polyneuritis. *Arch. Neurol. & Psychiat.* 29: 813 (April) 1933.

5. Jolliffe, Norman, and Joffe, P. M.: Relation of Vitamin B Intake to Neurological Changes in the Alcoholic Addict. *Proc. Soc. Exper. Biol. & Med.* 32: 1161 (April) 1935.

6. Spies, T. D., and DeWolf, H. F.: Observations on the Etiological Relationship of Severe Alcoholism to Pellagra. *Am. J. M. Sc.* 186: 521 (Oct.) 1935.

7. Strauss, M. B.: The Etiology of Alcoholic Polyneuritis. *Am. J. M. Sc.* 189: 378 (March) 1935.

then appeared of interest to determine whether or not this was true in alcoholic patients. To study this phase of the problem, a group of eight alcoholic individuals<sup>8</sup> who drank about 1 or 2 pints of whisky a day for a period of about ten days was selected. Specimens of gastric juice were aspirated two or three days after the patients were over their alcoholic bout and the proteolytic effect was determined. There was no free hydrochloric acid present in any of the samples of gastric juice.

The results obtained were of considerable interest. In these cases digestion did not take place as it did with the gastric juice of the nonalcoholic patients. Instead, no digestion occurred. It appeared that the proteolytic activity of gastric juice was inhibited.

Since the gastric juice from these alcoholic patients was found to be devoid of free hydrochloric acid, it seemed well to investigate its significance in relation to digestion. To determine this, hydrochloric acid was added to specimens of gastric juice aspirated from two of these individuals to make the free hydrochloric acid 40 and finally gastric juice with a free hydrochloric acid of 35 was obtained from an individual who drank a considerable amount of liquor for two or three days. Egg albumin was added to these specimens and incubated. The amount of digestion was noted for a period of forty-eight hours. In these experiments, too, no digestion was noted during the test period. Apparently, the absence of free hydrochloric acid in itself was not an important factor in inhibiting the proteolytic action of the gastric juice obtained from these alcoholic patients.

#### COMMENT

It is apparent from the results obtained in these experiments that a sufficient amount of alcohol inhibits the proteolytic activity of certain gastro-intestinal enzymes. In considering the chronic alcoholic patient with polyneuritis or deficiency disease, it would appear that the large quantities of liquor taken over a long period of time destroys digestive enzymes and thus prevents the proper digestion and assimilation of food. Consequently, a deficiency disease is produced. This idea fits in with the views already expressed by various authors. However, this study, perhaps, gives more direct evidence in this matter.

#### CONCLUSION

A proper amount of alcohol destroys the proteolytic activity of certain gastro-intestinal enzymes in vitro and in vivo.

It is suggested that alcoholic polyneuritis or deficiency disease may be caused, in part at least, by faulty digestion and assimilation of food resulting from the destruction of digestive enzymes by large quantities of alcohol taken over a considerable period of time.

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<sup>8</sup> I am indebted to Dr. John A. Foley of the Boston City Hospital for the use of these patients.

## ELECTRO-URETHROTOMY IN THE TREATMENT OF URETHRAL STRICTURES

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Present day teaching regarding the proper management of urethral strictures may be summed up in a few words: Dilate the stricture whenever it is possible to do so; otherwise cut it. Between these two extremes the average physician has chosen a rather benign course of therapy, which will give to his stricture patient the greatest benefit and best result. For routine dilation, hard rubber bougies and steel sounds have given relief to many patients for a good many years. For urethrotomies, the Maisonneuve knife and the Otis instruments are only too well known to most urologists.

The fact that there has been no radical change in instruments and technic during the past twenty-five years or more speaks well for present day therapy, which in the majority of instances has given satisfactory results. Because of conservatism, however, one wonders whether or not urologists are apt to crowd into the dilation group strictured urethras which perhaps primarily should be treated surgically. I am sure there is a small group of patients who submit to dilation treatment only out of sheer necessity in order to obtain relief from their severe, distressing symptoms. Again, urologists hesitate to advise surgery or to operate on some of these obstinate strictures because from experience they have learned that adequate satisfactory results are not always obtained. The importance of urethral strictures is seriously brought to our attention when we are dealing with such complications as superficial urinary extravasation. In large hospitals, where many of these patients are seen and cared for, the surgical mortality is still reported to be approximately 50 per cent.

It is still recognized that there are certain types of strictures which should in most instances be treated surgically. Among these may be mentioned (1) traumatic or fibrotic strictures, (2) congenital strictures, (3) resilient strictures, (4) strictures of the penoscrotal angle and (5) strictures in patients who develop chills and fever following instrumentation. There is another small group of patients who do not always fit well into the scheme of progressive dilation and are at times better managed surgically. Occasionally an individual is seen who does not have time to undergo a long course of urethral dilation. Elderly patients with poor health may not tolerate well the shock of repeated sounding. Many Negro patients abhor the sight of a sound and will not submit to regular dilation treatments. Occasionally fibrotic strictures develop in the anterior urethra following transurethral operations, and the dilation management of these strictures may be very troublesome. In the female, undilatable strictures are encountered which may lend themselves very readily to surgical intervention.

For some reason or other, it is not always possible to treat these patients surgically. Hospitalization for a

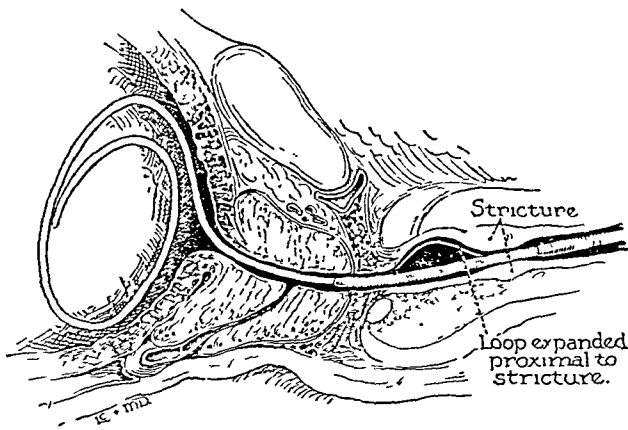
Read before the Chicago Urological Society, Jan. 23, 1936.

This instrument is manufactured by I. Greenwald, Inc., Gary, Ind. From the Department of Urology, Northwestern University Medical School, and Passavant Memorial Hospital.

The author is indebted to Drs. Sanner, Christensen and Hibbs of the Urological Department, Northwestern Medical School, for their help and cooperation in this work.

**Candy and the Child's Diet.**—In general, the proper place of sugar in the food supplies and eating habits of children is not in such concentrated forms as candy, nor in the indiscriminate and excessive sweetening of all kinds of food, but rather as a pre-servative and mild flavor to facilitate the introduction into the child's dietary of liberal amounts of fruit and milk. For many reasons it is desirable that the dietary contain about a quart of milk per day, at least as long as growth continues. —Sherman, H. C., Food and Health, New York, Macmillan Company, 1934.

few days to a few weeks or more becomes necessary. On the other hand, when a patient is hospitalized and operated on with the Maisonneuve or Otis instrument, complications such as hemorrhage and sepsis are not uncommon and even death may occur. While urethrotomy is a rather simple operation, its present disfavor may be the result of too many complications and poor results. Admitting that surgical strictures still exist, any operation which will lower the present



Method of inserting electro urethrotome.

morbidity and mortality and give better results should become the procedure of choice.

During the past three years at the Northwestern University Urological Clinic we have resorted to a new method of treating urethral strictures. I am not aware that this method has been reported previously. Livermore<sup>1</sup> in 1930 suggested the use of a fulgurating current for the softening of urethral strictures through a urethroscope. Sarmiento<sup>2</sup> of Mexico City recently reported cases of urethral strictures treated with bipolar-diathermy coagulation. Although he reports 95 per cent good results, it would seem difficult to control the depth of the coagulation in all cases in which this type of current is used.

With the recent popularity of the cutting current, it occurred to me that this type of current might be utilized in the cutting of urethral strictures. The preliminary report of this work has already appeared.<sup>3</sup> A sufficient number of patients have been operated on and followed to allow further comment on this work. As will be noted, we have treated some small caliber strictures by urethrotomy which might have been dilated with sounds just as easily. In order to evaluate this procedure rapidly and compare notes with the usual dilation treatments, all tight strictures were first sectioned and subsequently dilated.

For the division of urethral strictures we have developed a No. 12 F., semiflexible, insulated electro-urethrotome equipped with an expansible cutting loop. I have elected to call this operation an electro-urethrotomy. A standard filiform bougie should be attached to act as a guide. After the urethrotome has been inserted, the loop may be expanded to the desired caliber just proximal to the deepest stricture, as shown in the diagram. Contact is then made with a foot-switch and the instrument withdrawn. The current

may be discontinued any time during the withdrawal. All cutting is done at 12 o'clock along the surgical urethral roof and distal to the cut-off muscle. There is no shock and very little active bleeding. One per cent cocaine urethral anesthesia has been used as a routine in all but one case. Patients who have urine in the bladder are able to void immediately after the urethrotomy. An indwelling catheter is unnecessary. In a tight, deep stricture of the bulb, difficulty may be encountered in passing the urethrotome. Should this happen, the stricture may first be dilated with a small sound or bougie, and cut later. Traction on the urethra with pressure on the suspensory ligament may straighten the canal sufficiently to allow the instrument to pass.

A summary of the first fifty stricture patients on whom an electro-urethrotomy was performed is presented here. Forty-three of the patients were operated on in the dispensary, six in the Passavant Memorial Hospital, and in one case surgery was precluded because of high grade morphine addiction. The patient was taking between 5 and 8 grains (0.3-0.5 Gm) daily, and we felt that this was a contraindication to this or any other operation.

These strictures were classified as in table 1. The majority of the single strictures were located in the bulb. All patients but eight gave a history of a previous urethral infection. Twenty-one, or 42 per cent, had a history of stricture treatments. Eight, or 16 per cent, gave a history of one or more stricture operations.

The associated pathologic condition was in forty-eight instances a coexisting prostatovesiculitis of various grades. In fifteen patients out of forty, 38 per

TABLE 1—Classification of Strictures

Single.	29	Filiform .. . . .	24
Multiple . . . .	21	Traumatic . . . . .	4
Small caliber (below 20 F )	48	Undilatable and resilient. . .	7
Large caliber (above 20 F ).	2		

TABLE 2—Associated Pathologic Conditions

	No of Cases	Percentage
Chronic prostatovesiculitis . . . . .	48	97.9
Hypertension (blood pressure not known in ten) . . . . .	15	38.46
Vesical neck obstruction (cancer adenoma) . .	7	14.26
Arthritis . . . . .	6	12.23
Acute retention . . . . .	4	8.16
Diverticula of the bladder . . . . .	3	6.12
Positive Wassermann reaction . . . . .	3	6.12
Gonorrhea . . . . .	2	4.08
Varicocele . . . . .	2	4.08
Renal insufficiency . . . . .	2	4.08
Bilateral epididymitis . . . . .	1	2.04
Solitary ulcer . . . . .	1	2.04
Reduplication (infection of lower half) . .	1	2.04
Carcinoma of bladder . . . . .	1	2.04
Generalized carcinomatosis . . . . .	1	2.04
Pulmonary tuberculosis . . . . .	1	2.04

cent, of whom the blood pressure was recorded, a hypertension was present. Seven patients, 14.26 per cent, also showed evidence of vesical neck obstruction. Six of these were contractures and inflammatory bars, while one was a middle lobe prostatic hypertrophy so diagnosed elsewhere at operation. Six patients, or 12 per cent, had signs of single or multiple arthritis. Four had an acute urinary retention from twelve to forty-eight hours before operation. Only three, or

1. Livermore, G. R.: South M. J. 23: 849 (Sept) 1930  
2. Sarmiento, S. Aguilar. Diathermocoagulation in Filiform Strictures of the Urethra, Salubridad 3: 46-53 (Jan-March) 1932  
3. Riba, J. W., and Sanner, J. E.: Treatment of Urethral Strictures of Small Caliber by a New Method, J. urol 30: 361 (Sept) 1933.



6 per cent, had a positive Wassermann reaction. This percentage seems low and is quite at variance with the publication of Ross<sup>4</sup> in 1927. In a series of fifty cases of stricture, he found a positive Wassermann reaction in thirty-three, or 66 per cent. Two patients had gonorrhea. One of these had increasing difficulty in urinating after a six months protracted gonorrheal urethritis. A urethrotomy, followed by a few urethral sounds, cleared up the difficulty in urinating and the

TABLE 3—Immediate Results of Treated Urethral Structures

	Dilation Treatment (45 Cases)	Electro- Urethrotomy (49 Cases)
Average caliber before	15.31 F.	10.8 F.
Average caliber after	25.91 F.	23.5 F.
Average number of dilations	12.0	0.0
Average number of sections	0.0	1.04
Average time	3½ mos	3½ wks

TABLE 4—Follow-Up Notes on Stricture Cases in Which Treatment Was Given

	Dilation Treatment (164 Cases)		Electro Urethrotomy (49 Cases)	
	Number	Per Cent	Number	Per Cent
Returned	123	75	46	94
Failed to return	41	25	3	6
Improved	97	59.14	46	94
Unimproved	22	13.42	2	4
Made worse	2	1.22	0	0
Result unknown	2	1.22	1	2

urethral infection. The other patient was treated by urethrotomy and three weeks later developed a urethral discharge that contained gonococci. We have listed this case as an acute exacerbation, although a reinfection was a possibility. Marked renal insufficiency was noted in two cases. Bilateral epididymitis, solitary ulcer of the bladder, double kidney and ureter, carcinoma of the bladder, generalized carcinomatosis and advanced pulmonary tuberculosis were noted once each.

It has been interesting to compare the immediate results of cases in which electro-urethrotomy was done with those treated by progressive dilation. From the records of the Northwestern University Clinic it was noted that it took an average of twelve treatments over a period of three and one-half months to perform dilation in forty-five cases from 15.31 F. to 25.91 F. In the present series we have been able to increase the average caliber in forty-nine cases from 10.8 F. to 23.5 F. with approximately one section treatment (two patients were reoperated on because the deepest stricture was missed the first time). Also from the records of the clinic, in 164 cases in which the diagnosis of urethral stricture was definitely recorded, forty-one patients, or 25 per cent, failed to return for treatments; ninety-seven, or 60 per cent, noted satisfactory improvement from their treatments, while twenty-two, or 13.5 per cent, stated that they were unimproved. Two patients stated that they were made worse and in two other cases the results were not clear.

In the present series of forty-nine cases in which operation was performed, forty-six, or 94 per cent, of the patients returned for at least one follow-up treatment. Of the three patients who did not return, follow-up reports were obtained for two. One clinic

patient informed the social worker after six months had elapsed that he was entirely well. This was the patient who had bilateral epididymitis and a marked pyuria. I demonstrated the case to the students as probable genito-urinary tuberculosis. Calibration was not done before cystoscopy and the stricture was discovered while an attempt was being made to introduce the cystoscope. The other patient was from out of town and he went elsewhere for his follow-up examination one month after the urethrotomy. This patient is one of the two listed in the unimproved column. Cystoscopy elsewhere revealed an inoperable carcinoma of the bladder. The other patient who was unimproved was later operated on with an excellent final result. The result in one patient who did not return is unknown.

The operative and postoperative complications have not been troublesome. Eight patients had some immediate postoperative bleeding, while three had mild secondary hemorrhages on the first, third and sixth days. None of these hemorrhages were severe. In two cases the loss of blood amounted to above 2 ounces (60 cc.) each. In two cases considerable hemorrhage was produced by the passage of the instrument. Postoperative frequency and burning lasting from a few hours to seven days were noted by thirteen patients. Two patients had partial temporary urinary incontinence, in one noticeable for four days and in the other for ten days. One patient developed a mild epididymitis, while another developed an acute prostatovesiculitis after three weeks, at which time the smear was positive for gonococci. A paraphimosis was seen once on the fourth postoperative day; it was easily reduced. In four of the earlier cases some mechanical difficulties were experienced, such as the breaking or collapsing of loops.

It is noted that, of forty-nine patients who were operated on, only thirty returned for follow-up sounds.

TABLE 5—Operative and Postoperative Complications of Electro-Urethrotomy

Hemorrhage	
Immediately after operation	8
Secondary	3
Due to insertion of the instrument	2
Frequency and burning	13
Instrument and current difficulty	4
Temporary incontinence	2
Epididymitis	1
Acute prostatitis	1
Paraphimosis	1

TABLE 6—Six Months' Results in Thirty Cases (Electro-Urethrotomy)

Average caliber before treatment	10.8 F.
Average caliber after six months	26.5 F.
Average number of urethrotomies	1.04
Average number of postoperative dilations	4.2

At the end of six months the average caliber in these thirty cases was 26.5 F. The average number of postoperative sounds per patient was 4.2. Comparing these results with the average results of dilation, it was found that the number of treatments necessary to open a tightly strictured urethra had been reduced by 66 per cent. Only one of the earlier patients who was operated on has returned within the last year with a recurrence. I am sure there must be others who perhaps have gone

elsewhere Twenty-six patients were recently asked to return for observation, but to date (January 1936) only four have come in In these four cases the urethras were wide open after one, one and one-half, two and two and one-half years All patients who are coming in for infrequent follow-up sounds have shown no unusual tendency to recontract

#### REPORT OF CASES

A few case reports are submitted illustrating the type of strictures in which electro-urethrotomy has given excellent results:

CASE 1—L T, a Negress, aged 55 years, came to the clinic for the first time Oct 25, 1927, complaining of pain and difficulty on urination She did not return for treatments and for seven years had irregular dilations elsewhere Sept 16, 1935, she returned to the clinic with the same complaints plus dribbling, frequency and nocturia The Wassermann reaction was negative but the Kahn test was three plus positive A filiform stricture in the distal urethra, a papilloma of the external meatus and pus in the urine were found on examination A few days later a 12 F sound was passed with slight difficulty October 3 an electro-urethrotomy was performed under 1 per cent cocaine anesthesia The stricture was cut to a 25 F Ten days later she returned with marked improvement of her symptoms Cystoscopy was performed October 23 and a 24 F cystoscope was easily passed A cystic urethritis was noted, which was lightly fulgurated Six weeks after the urethrotomy a Kollmann dilation to 30 F was easily carried out Dec 9, 1935, she stated that there were no bladder symptoms, nocturia, difficulty or frequency There was no residual urine Sections of the tumor removed from the meatus the day on which cystoscopy was done showed a benign papilloma This is a case of undilatable fibrotic stricture in the female which reacted well to surgical division

CASE 2—W R, a man, aged 54, came to the clinic June 13, 1935, because of an acute conjunctivitis The Wassermann reaction was four plus positive He was treated in the Department of Dermatology and referred to the Department of Urology September 19 because albumin and pus had been noted in the urine He stated that he had no urinary symptoms Examination, however, revealed a pyuria, chronic prostatovesiculitis (grade 2) and a filiform stricture of the bulb A 10 F Le Fort sound was passed September 23 On arriving home he had a severe chill and was in bed for one week He was removed to a hospital on account of sepsis, where he remained for sixteen days more October 24 he returned to the clinic His condition was about the same as on the previous examination The urine was dirty and ammoniacal The stricture was now size 13 F An electro-urethrotomy was performed and the stricture was divided to 27 F He returned in one week stating that he was definitely improved November 14 a 24 F diagnostic bougie was passed into the bladder without difficulty A No 25 Van Buren sound was passed easily, December 20 Jan 10, 1936, a 26 F Benique was easily passed into the bladder Residual urine of 2 ounces (60 cc) was present A vesical neck obstruction is probable, and cystoscopy will be done The patient is very happy over the result

CASE 3—J H, a man, aged 54, entered the clinic Feb 25, 1935, complaining of difficulty in urinating, fever and swelling of the scrotum He had been operated on for strictures in 1900 and 1932 Examination revealed a typical superficial urinary extravasation with sugar and acetone in the urine The Wassermann reaction was negative He was operated on the same day, and an internal and external urethrotomy was performed with a Maisonneuve knife A large, deep perineal abscess also was found The anterior strictures were cut to a 26 F He returned to the clinic March 26 and a 12 F Le Fort sound was passed with slight difficulty He was subjected to weekly dilations and on June 18 the urethra was open to a 21 F Sounds were passed with some difficulty and the perineal fistula was intermittently open He was not seen again until November 4 At this time he stated that there had been a recent recurrent swelling in the perineum, which had ruptured Examination revealed an indurated scrotal and

perineal fistula The urethra was tightly strictured An electro-urethrotomy was performed November 7 and the strictures were divided to a 27.5 F He returned six days later and the fistula had closed Three weeks after the electro-urethrotomy a No 25 Van Buren sound was easily passed and the fistula was still closed December 4 he stated that he felt better and urinated with less discomfort than he had for many years

CASE 4—E C, a Negro, aged 62, was referred to the clinic by Dr Robert Graham, Nov 2, 1934, because of rapid recontraction of the urethral strictures following sounds He had been troubled with strictures for twenty years On examination multiple small caliber strictures, a prostatovesiculitis and pus in the urine were noted The Wassermann reaction was negative An electro-urethrotomy was performed December 6, and the strictures were divided to a 27 F Jan 25, 1935, roughness was noted in the bulb with a 20 F diagnostic bougie The deep stricture only was recut to a 28 F April 2, 1935, the urethra was open to a 24 F sound Dilation was repeated at irregular intervals and on October 17 the urethra was open to a 31 F sound This was a resilient stricture, which yielded readily to electrosurgical division The deepest stricture was not cut well the first time and was adequately redivided the second time The patient is quite happy about the final result

CASE 5—W W, a man, aged 40, seen in the Passavant Memorial Hospital Oct 5, 1934, complained of chills and fever, difficulty in urinating, backache, and swelling of the knees and ankles He was treated for urethral strictures two years before Examination disclosed a pyuria, a prostatovesiculitis, multiple arthritis, and multiple strictures of the anterior urethra (bulb 12 F) A flat film was negative for stones The Wassermann reaction was negative The following day the strictures were divided with the electro-urethrotome to 25 F He left the hospital greatly improved on October 13 November 3, a 22 F diagnostic bougie passed easily The following week a No 23 F Van Buren sound was passed snugly The urine now was clear and he had no symptoms The patient did not return to the office until May 24, 1935, at which time he presented signs of an acute anterior gonorrheal urethritis He was somewhat chagrined about the diagnosis and did not return for treatments This was an unfavorable dilation case which reacted well to urethrotomy

CASE 6—S A, a Negro, aged 65, had been coming to the urologic clinic for five years because of frequency, nocturia and some difficulty in urinating Repeated cystoscopic examinations revealed a contracture of the bladder neck with from 2 to 4 ounces (60-120 cc) of clear residual urine He was referred elsewhere for resection of the prostate and was operated on Dec 26, 1934 Oct 8, 1935, he returned complaining of recurring difficulty on urination Calibration revealed eight distinct fibrotic strictures of the anterior urethra, size 16 F An electro-urethrotomy was performed November 14 and the entire urethra divided to 27.5 F Four weeks later a No 24 F Van Buren sound was easily passed, December 13 a 25 F and December 27 a 26 F Van Buren sound passed easily These multiple fibrotic strictures following prostatic resection were very easily managed by an electro-urethrotomy and sounds

CASE 7—H G, a man, aged 26, was referred to the office in August 1934 with a history of an undilatable stricture of four years' duration In a motorcycle accident in 1929 he sustained some injury to the penis In 1930 a physician inserted a sound carrying two copper electrodes into the urethra The current was switched on for five minutes, during which time he experienced severe pain During the next four years he had many urethral dilations, and examination revealed a 2 inch fibrotic stricture of the penile urethra, size 14 F Because of the history, an electro-urethrotomy was recommended and performed Aug 19, 1934 Two attempts to cut the stricture were unsuccessful He returned December 31 and another urethrotomy was tried Again the loop failed to cut He returned again March 17, 1935, stating that, while he believed in this operation, nevertheless he was afraid of it He confessed that during the previous operations as soon as he felt the current he raised his buttocks off the body electrode and so disconnected the current Another urethrotomy was performed at this time, with the plate placed over the abdomen

secured with an abdominal binder. At this sitting the strictures were easily divided to 31 F. May 6, 1935, a No. 23 F. Van Buren sound passed without difficulty. In a recent communication he stated that he was being kept open to 26 F. and was symptom free. This is a case of an undilatable stricture which yielded to an electro-urethrotomy when adequately performed. The first two operations failed because the patient feared the use of electrical instruments in the urethra and deliberately chose to break the current during the operation.

CASE 8.—R. H., a medical student, aged 32, had sustained a straddle injury at the age of 8 years. During the following twelve years he had many sounds passed and three stricture operations. The perineal fistula persisted. In 1921 he was operated on by Dr. Dean Lewis with an excellent result. He was seen in the Passavant Hospital in February 1933 because of a pyuria following an influenzal infection. The urine was dirty and contained many shreds. He was again seen in the office April 10, 1933, at which time calibration of the urethra revealed a long fibrotic stricture in the bulb (13 F.). A prostatovesiculitis (grade 2) was present. The seminal fluid also contained *Trichomonas* in large numbers. He preferred an electro-urethrotomy to the usual sound treatments. April 22, 1933, in the clinic, the urethra was cut to 26 F. On the sixth postoperative day he had a slight secondary hemorrhage with some frequency of urination. One month later a 23 F. diagnostic bougie was easily passed into the bladder. June 2 a 24 F. and September 19 a 25 F. bougie were passed. He has reported for irregular urethral dilations at three or four month intervals and a No. 29 F. Van Buren sound can now be passed without difficulty. Because the patient had such brutal sound treatment when he was a boy, he felt that an electro-urethrotomy was the procedure of choice in his case.

#### COMMENT

This electro-urethrotome is not presented as a panacea for all urethral strictures. It has been found very useful in the fibrotic, resilient and undilatable types. The operation is not recommended to displace the use of urethral sounds or bougies. In large caliber strictures and urethral infiltrations, it undoubtedly has little value. In patients, however, who fall in the groups named, an electro-urethrotomy may fill a needed niche, particularly from the standpoint of the patient. For an individual who has a strictured urethra and who for some reason or other (renal colic, hematuria or injuries) needs an immediate cystoscopy, this method would seem more rational than the usual avulsion of the stricture, which is so frequently resorted to.

In our hands, this operative technic has seemed so much simpler than that of other urethrotomies now in general use that I feel it may replace some of them to a certain extent. I do not maintain that this instrument and the technic employed are necessarily entirely correct, but I do believe that the principle of using the cutting current marks a step of progress in the management of undilatable and surgical strictures. Even though the majority of these patients were operated on in the clinic, I do not choose to recommend this operation as an office procedure. I feel that in most instances this operation has a lower morbidity and mortality and necessitates fewer hospital days. Post-operative sounds should be passed as a routine procedure, preferably after three or four weeks. We have calibrated most patients after three weeks and passed a Van Buren sound on the fourth week. With a few exceptions, these sounds were very readily passed. There was no indication that more scar tissue was apt to form following this operation. In reality, there must be considerable absorption. In nearly every case in which the operation was properly performed, it has been possible to convert a small caliber stricture into

one of large caliber with one electrosection treatment. We have not hesitated to repeat this operation a second time. Because we were dealing primarily with ambulatory patients we have elected to keep the caliber of the cut closer to a 25 F. than to a 30 F. No patient objected to the treatment and all were satisfied with the results obtained. We have no definite check on postoperative temperatures, though I am certain that some patients must have had fever reaction.

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## EFFECT OF CAROTENE AND VITAMIN A ON PATIENTS WITH DIA- BETES MELLITUS

### III. THE EFFECT OF THE DAILY ADMINISTRATION OF CAROTENE ON THE BLOOD CAROTENE OF NORMAL AND DIABETIC INDIVIDUALS

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In a previous study we<sup>1</sup> reported the effect of single doses of carotene on the blood carotene of normal and diabetic persons to whom it had been orally administered. In those cases the blood carotene was followed daily for one week after the administration of carotene. In the present study we have observed the effect of the continued administration of carotene on the blood carotene and cholesterol of a group of four normal and four diabetic persons.

#### PROCEDURE

Following a preliminary period on a constant diet, during which the blood carotene and cholesterol were determined, three of the normal subjects and three of the diabetic patients were given orally 1 cc. of 0.3 per cent carotene in oil daily for a period of from two to four months (cases 13, 14, 15, 16, 17 and 18). The diets in this group of normal subjects were not identical to the diets of the diabetic patients but included vegetables twice a day with the exception of carrots. None in this group were hospitalized and, as it was difficult for them to come to the laboratory before breakfast, blood was withdrawn four hours after breakfast. The carotene was given with the evening meal, so that the blood carotene estimations were done approximately seventeen hours after the administration of carotene. Determinations were made at intervals of from one to two weeks.

The observations in case 19, normal, and case 20, diabetic, were done while the individuals were in the hospital. Their diets were in every way identical. The carotene was determined on fasting samples of blood. After the control period, two doses of 25 cc. of 0.3 per cent carotene were given at intervals of one week.

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1. Ralli, Elaine P.; Brandaleone, Harold and Mandelbaum, T.: Studies on the Effect of the Administration of Carotene and Vitamin A in Patients with Diabetes Mellitus: I. The Effect of the Oral Administration of Carotene on the Blood Carotene and Cholesterol of Diabetic and Normal Individuals, *J. Lab. & Clin. Med.* 20: 1266, 1935

Following each administration, blood carotene determinations were done at intervals of five, twenty-four, forty-eight and ninety-six hours and one week. A week after the second administration of 25 cc. of carotene in the normal subject and two weeks after in the diabetic patient, daily administrations of 5 cc. were begun. These were continued for twenty days in the diabetic patient, when owing to an error none was given for four days. It was begun again in doses of 10 cc.

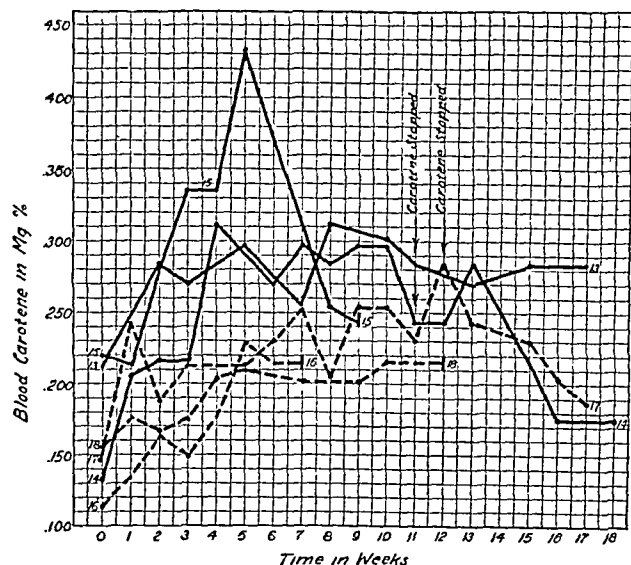


Chart 1.—Effect of the daily administration of 1 cc. of 0.3 per cent carotene in oil on the blood carotene of three normal subjects and three diabetic patients. Solid line, diabetic patients; broken line, normal subjects.

daily and continued for ten more days. The carotene was then discontinued and the blood carotene was followed for a period of ten days. The normal individual received 5 cc. daily for twenty-nine days and the blood carotene was estimated at weekly intervals for twenty-eight days after the administration was discontinued.

Carotene was determined on the serum by the method of White and Gordon<sup>2</sup> and cholesterol on the plasma by the Bloor colorimetric method.<sup>3</sup> Blood sugar determinations were made but are not reported, as they bore no relation to the blood carotene.

#### RESULTS

The status of the patients studied and the diets and insulin given the diabetic patients are summarized in table 1. The effects of the daily administration of 1 cc. of 0.3 per cent carotene in oil in cases 13, 14 and 15, diabetic, and cases 16, 17 and 18, normal, are shown graphically in chart 1. In the three normal subjects the blood carotene rose after one week. In cases 16 and 18 the rise was 0.022 mg.; in case 17 it was 0.095 mg. This was followed by a fall the second week in cases 17 and 18 and then by a progressive increase, reaching a peak in cases 16 and 18 on the thirty-fifth day and on the eighty-fourth day in case 17. In the diabetic patient the increase was progressive from the start, with the exception of a fall of 0.014 mg. in case 13 the third week. The peak was reached after twenty-eight days in case 14, thirty-five days in case 15 and fifty-six days in case 13. In two diabetic patients

the absolute increase was greater than in the normal subjects, being 0.178 and 0.212 mg., while the greatest increase in the normal subjects was 0.136 mg. Case 15, normal, was followed for thirty-five days after the administration of carotene was stopped. The blood carotene fell progressively and on the thirty-fifth day was 0.189 mg. per hundred cubic centimeters. This was higher than prior to the administration of carotene. In the diabetic, cases 13 and 14 were followed for forty-two and forty-nine days respectively after carotene had been stopped. The blood carotene in case 13 had not returned to the original level forty-two days after carotene was discontinued. In case 14 there was a definite drop on the twenty-eighth day, and the blood carotene was still lower on the thirty-fifth day, but, although within the normal range at that time, was not as low as it had been prior to the administration of carotene. The fall in these two diabetic patients was slower than in the one normal subject followed.

In the normal and the diabetic receiving the larger daily doses of carotene a different set of conditions was established as a result of the previous administration of a total of 50 cc. of carotene. In table 2 we have reported the changes in blood carotene during each week following these large single doses. As these results are similar to those previously reported,<sup>4</sup> they require no further discussion.

When only a week was allowed to elapse in the normal after the second administration of 25 cc. of carotene, the fasting blood carotene was still elevated and was only 0.013 mg. lower than that of the diabetic. This made it possible to observe the effects of the further administration of carotene in a normal subject whose blood carotene was as high as that of a diabetic patient. We have shown in a previous study<sup>4</sup> that the average fasting blood carotene in a group of diabetic patients was 0.262 mg. per hundred cubic centimeters and in a group of normal subjects was 0.109 mg.

The effect of carotene in cases 19 and 20 is shown graphically in chart 2. In case 20, diabetic, the blood carotene rose after six days to 0.513 mg. per hundred cubic centimeters, while in the normal subject at this time it had risen only to 0.351 mg. The total rise at

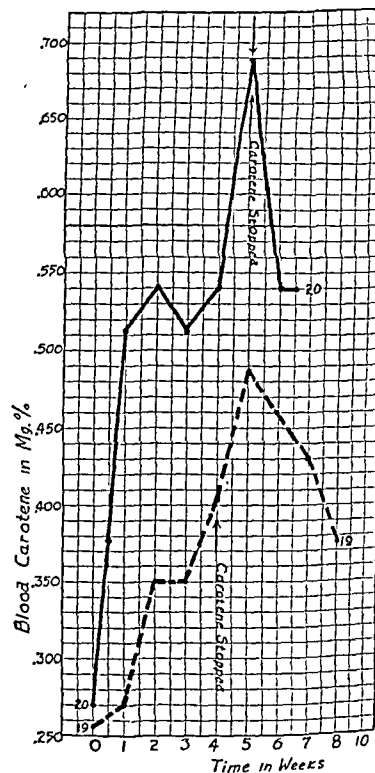


Chart 2.—Effect of the daily oral administration of 5 cc. of 0.3 per cent carotene in oil on the blood carotene of one normal subject and one diabetic patient. Solid line, diabetic patient; broken line, normal subject.

2. White, F. D., and Gordon, E. H.: Estimation of Serum Carotene, *J. Lab. & Clin. Med.* 17: 53 (Oct.) 1931.  
3. Bloor, W. R.; Pelkan, K. F., and Allen, D. M.: Determination of Fatty Acids (and Cholesterol) in Small Amounts of Blood Plasma, *J. Biol. Chem.* 52: 191 (May) 1922.

4. Brandaleone, Harold, and Ralli, Elaine, P.: Fasting Blood Carotene Level in Normal and Diabetic Individuals, *Proc. Soc. Exper. Biol. & Med.* 32: 200 (Oct.) 1934.

this time was 0.243 mg. in the diabetic patient and 0.094 mg. in the normal subject. Even when the normal subject started with an increased carotene concentration in the blood, the rise was much less than in a diabetic patient. On the thirteenth day the blood carotene in the diabetic patient had risen to 0.540 mg. per hundred cubic centimeters and there was clinical evidence of carotenemia. The patient had at this time received 65 cc. of the carotene solution. The carotene-

TABLE 1.—Averages of Fasting Blood Carotene and Cholesterol Prior to the Administration of Carotene, Diets and Insulin in Diabetic Patients

Normal Subjects					Diabetic Patients								
Average					Average				Diet in Gm.				
Case	Age	Sex	Carotene, Mg. per 100 Cc.	Cholesterol, Mg. per 100 Cc.	Case	Age	Sex	Carotene, Mg. per 100 Cc.	Cholesterol, Mg. per 100 Cc.	Carbohydrate	Protein	Fat	Insulin, Units Daily
16			0.113	176	17	20		0.212	214	200	70	95	50
17	22		0.148	172	14	34		0.131	169	200	75	55	15
18			0.123	161	15	38		0.220	218	200	65	55	60
19*			0.168	.	20	45		0.239	204	200	75	55	45

\* The diet in case 19 was identical to the diet in case 20.

mia was most marked in the palms of the hands. Later the skin of the face had a definite yellow tinge. The yellow pigmentation of the face and hands persisted until ten days after the administration of carotene was stopped, and during this time the blood carotene remained at 0.540 mg. per hundred cubic centimeters. By the nineteenth day the yellow coloration of the skin had disappeared. The greatest increase in blood carotene in the diabetic patient was reached after twenty-nine days of carotene administration, at which time the patient had received, in daily doses, a total of 190 cc. of 0.3 per cent carotene in oil.

The normal subject received a total of 145 cc. of the carotene solution in a period of twenty-nine days. At the time when he had had 65 cc. the blood carotene was 0.350 mg. per hundred cubic centimeters, which was 0.190 mg. lower than in the diabetic patient. The greatest increase in blood carotene in the normal subject occurred seven days after carotene administration had stopped. During the administration of carotene the highest level was 0.486 mg. per hundred cubic centimeters and was reached on the twenty-eighth day. The blood carotene was determined at weekly intervals for four weeks after carotene was discontinued. By the fourth week it had fallen to 0.378 mg. per hundred cubic centimeters.

The blood cholesterol have not been charted, as the changes are similar to those previously reported.<sup>3</sup> The average cholesterol prior to carotene administration was 173 mg. per hundred cubic centimeters in the normal subjects and 205 mg. in the diabetic patients. The blood cholesterol was not followed in cases 19 and 20. In cases 13, 14 and 15, diabetic, there was a marked rise in cholesterol along with the rise in carotene only in case 15. The cholesterol in this patient rose from 218 to 257 mg. per hundred cubic centimeters and remained elevated during the period of carotene administration. In the normal subjects, cases 16, 17 and 18, the cholesterol increased along with the carotene in cases 16 and 17, rising from 176 to 227 mg. per hundred cubic centimeters in the former and from 172 to 227 mg. in the latter.

## COMMENT

The results in these four diabetic patients and four normal subjects show that even after continuous daily administration of carotene there is not as great an increase in blood carotene in the normal as in the diabetic individual. It seems to us that this tends to prove that dietary intake alone cannot account for the increase in blood carotene that is so often found in diabetic patients.<sup>5</sup> We have already<sup>1</sup> suggested an explanation for this increase in blood carotene in these patients; namely, that it is the result of a diminished ability on the part of the liver to convert carotene to vitamin A. Karrer<sup>6</sup> and others have shown that when the carotene molecule is split at its central double bond it will yield in the case of beta carotene two and in the case of alpha carotene one molecule of vitamin A. Moore<sup>7</sup> has shown that this transformation takes place in the liver. If the ability of the liver to accomplish this transformation should be diminished, carotene would accumulate there, absorption from the blood would be slowed up and a rise in blood carotene would result. This is still only a hypothesis, regarding which we hope that further investigation will provide more evidence.

As regards the production of carotenemia, we have observed this in three other diabetic patients and in each of them the blood carotene was above 0.500 mg. per hundred cubic centimeters. Apparently a concentration of carotene of at least this extent is necessary for the development of clinical carotenemia. Undoubtedly individual differences occur, depending on the rate of excretion through the skin.

## SUMMARY AND CONCLUSIONS

1. The effects of the daily oral administration of 0.3 per cent carotene in oil on the blood carotene of four normal and four diabetic individuals was observed for periods varying from one to four months.

2. Following the administration of 1 cc. of the carotene solution to three of the normal subjects and three

TABLE 2.—Effect of Two Doses of 25 Cc. of 0.3 Per Cent Carotene, Administered at Intervals of One Week, on the Blood Carotene in Case 19 and Case 20, Diabetic

Time	Case 19, Normal		Case 20, Diabetic	
	First Dose Carotene, Mg. per 100 Cc.	Second Dose Carotene, Mg. per 100 Cc.	First Dose Carotene, Mg. per 100 Cc.	Second Dose Carotene, Mg. per 100 Cc.
Fasting	0.189	0.216	0.281	0.270
3 hours	0.250	0.257	0.383	0.224
24 hours	0.257	0.270	0.297	0.270
48 hours	0.270	0.270	0.297	0.257
96 hours	0.270	0.257	0.270	0.224
1 week	0.257	0.257	0.257	0.270

of the diabetic patients, there was a greater increase in the blood carotene in the latter and a more gradual return to the fasting level after carotene was stopped.

3. Following the administration of 5 cc. daily to one diabetic patient and to a normal subject whose blood carotene level had been elevated as a result of the previous administration of a large dose of carotene, there

5 Brandaleone and Ralli<sup>4</sup> Rabinowitch, I. M., Carotenemia and Diabetes. Relationship Between Sugar, Cholesterol and Carotene Contents of Blood Plasma, Arch. Int. Med. 45: 586 (April) 1930

6 Karrer, P. Ergebn. d. Physiol. 34: 812, 1932

7 Moore, Thomas<sup>7</sup> Vitamin A and Carotene. The Distribution of Vitamin A and Carotene in the Body of the Rat, Biochem. J. 25: 275 (No. 1) 1931.

was a still greater increase in the blood carotene in the diabetic patient above that of the normal subject and clinical evidence of carotenemia appeared.

4. In three normal subjects and three diabetic patients the blood cholesterol was estimated. This rose with the blood carotene in one diabetic patient and in two of the normal subjects.

5. To explain this increase in blood carotene in diabetic patients, both before and after carotene administration, it is suggested that in the diabetic patients the ability of the liver to convert carotene to vitamin A is diminished, and that this results in an increased concentration of carotene in the liver, which interferes with the absorption of carotene from the blood.

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## ACUTE NONCALCULOUS CHOLECYSTITIS

A STUDY OF THIRTY-ONE CASES

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It is our purpose in this study to report those cases of acute noncalculous cholecystitis which have come under our observation in the past ten years. Certain distinguishing characteristics of the syndrome will be described and attention will be drawn to a possible hematogenous origin from some extrabiliary focus of infection.

Although gallbladder disease has been thoroughly discussed in the literature, little mention has been made of acute noncalculous cholecystitis. Judd and Phillips<sup>1</sup> reported 508 cases of acute gallbladder disease in which twenty-four, or 4.7 per cent, of the patients had no stones. In Blalock's<sup>2</sup> series, 4 per cent of 136 noncalculous cases presented a microscopic diagnosis of acute cholecystitis. Of Whipple's<sup>3</sup> 160 cases of acute cholecystitis, thirty patients had no stones. Mentzer<sup>4</sup> described thirty-eight cases of gangrenous cholecystitis, of which ten were noncalculous. None of these authors, however, discussed the importance of the noncalculous form of acute gallbladder disease as a distinct pathologic and etiologic entity.

This report on thirty-one patients who have undergone operation excludes all instances in which any doubt existed as to the presence or absence of calculi and includes only those cases in which the operating surgeon stated that no stones were present. These cases are part of a group of 379 cases of acute cholecystitis in which operation has been done since 1925.<sup>5</sup> When these figures are added to those of the aforementioned authors, it may be seen that in 1,221 cases of acute cholecystitis there are 100, or 8.1 per cent, of noncalculous cholecystitis (table 1).

It is interesting to note the high incidence of this disease in men. In this series, eighteen of thirty-one patients, or 58 per cent, were males, whereas in 348 cases of acute cholecystitis presenting cholelithiasis,<sup>5</sup> only eighty-three, or 23.8 per cent, of the patients were males. Blalock found no great disparity in his noncalculous cases, in which there were forty-seven males and fifty-three females. Furthermore, the age incidence is fairly well distributed and not predominant in any one decade of life. The old aphorism "fair, fat and forty" applied to females does not appear to hold true for the acute noncalculous form of the disease. It so happens that there is not one female between the ages of 40 and 50 years in this series (table 2).

Nine of our patients gave histories or showed signs of an extrabiliary infection preceding the cholecystitis. Patient 7 had been confined to bed with a respiratory infection diagnosed as "grip" for one week before the onset of abdominal symptoms. Patient 17 had suffered from pneumonia five weeks prior to the gallbladder infection. A note on the chart in case 18 stated that the patient had "grip" with a severe cough for the two months previous to admission for abdominal pain. Case 25 gave a history of peptic ulcer for the past fifteen years and on physical examination showed a purulent discharge from the right ear. Case 31 also gave a history of peptic ulcer, of two years' duration. Patients 2, 21 and 8 had acute pharyngitis on admission to the hospital; the latter told of frequent "sore throats." Patient 29 was admitted to the hospital with a second attack of acute cholecystitis. Inspection of his record showed that the first attack of cholecystitis had developed during his stay in the hospital the previous year, after admission for treatment of a septic sore throat.

The usual story in calculous cases of frequent previous attacks, indigestion, belching and aversion for fatty foods was noticeably absent in the majority of

TABLE 1.—Incidence of Acute Noncalculous Cholecystitis

Author	Number of Cases	Number of Cases Without Stones	Per Cent
Judd and Phillips.....	508	24	4.7
Blalock.....	136	5	4.0
Whipple.....	160	20	18.7
Mentzer.....	38	10	26.3
Wolfson and Rothenberg.....	270	31	8.2
Total.....	1,221	100	8.1

TABLE 2.—Sex and Age Incidence

Age	Males	Females	Total
From 20 to 30 years.....	0	4	4
From 30 to 40 years.....	4	2	6
From 40 to 50 years.....	7	0	7
From 50 to 60 years.....	2	5	7
From 60 to 70 years.....	4	2	6
From 70 to 80 years.....	1	0	1

these cases (tables 3 and 4). Four of the thirteen female patients and eleven of the eighteen male patients, or 48.4 per cent of the total number, were admitted without any history of previous attacks or symptoms referable to gallbladder disease. Only seven of thirty-one patients told of aversion for fatty foods. Furthermore, only two of eighteen male patients, as shown in table 4, had abstained from eating fried or fatty foods. Whereas seven of the thirteen female

From the Surgical Services of the Jewish Hospital of Brooklyn.

We are indebted to the following surgeons for their cooperation in permitting us the use of the reports of their cases: Drs. William Linder, John Linder, Herman Shann, A. H. Iason, Louis Berger, H. W. Louria and L. Morse.

1. Judd, E. S., and Phillips, J. R.: *Ann. Surg.* **98**: 771-779 (Oct.) 1933.

2. Blalock, Alfred: *Bull. Johns Hopkins Hosp.* **35**: 391 (Dec.) 1924.

3. Whipple, A. O.: *Bull. New York Acad. Med.* **7**: 211 (March) 1931.

4. Mentzer, S. H.: *California & West. Med.* **32**: 224 (April) 1930.

5. Unpublished data from the Surgical Services of the Jewish Hospital of Brooklyn.



patients had been troubled with indigestion and belching previous to the onset of acute cholecystitis, only four of the eighteen male patients gave positive histories of these symptoms. Thus, only 38.7 per cent of the patients in this series had indigestion, as compared to 86 per cent of Blalock's patients with all types of cholecystitis who suffered from this symptom.

Acute noncalculous cholecystitis is usually a severe and fulminating infection. The patients appear sicker, more frequently have chills, and maintain a higher temperature range than those with acute cholecystitis caused by cystic duct stone. The average admission temperature of the patient with acute noncalculous cholecystitis was 101.9 F., while that of the 348 patients with acute calculous gallbladder disease<sup>5</sup> was 100.9 F. Of the patients, 46.4 per cent suffered from chills, a figure that is considerably higher than that found in calculous cases. This high incidence of chills may be indicative of the embolic phenomena that sometimes precede and lead to the production of gallbladder infection. The severity of this disease is shown by the high leukocyte

this symptom. One must interpret jaundice in noncalculous cases as caused by cholangitis with hepatitis rather than by obstruction.

Seventeen cholecystostomies and fourteen cholecystectomies were performed on the thirty-one patients. Sixteen surgical specimens consisting of fourteen gallbladders and two biopsies of the gallbladder were

TABLE 5—Summary of Symptoms and Signs

Average temperature on admission	101.9 F.
Average leukocyte count	15,600 per cu mm.
Average polymorphonuclear leukocytes	84.6 per cent
Cases with chills	46.4 per cent
Cases with right upper quadrant abdominal pain	83.5 per cent
Cases with exacerbating colic pain	32.2 per cent
Cases with back pain	63.3 per cent
Cases with girdling pain	20.6 per cent
Cases with right scapular pain	39.3 per cent
Cases with jaundice	25.8 per cent
Cases with right upper quadrant abdominal tenderness and rigidity	93.5 per cent

TABLE 3—Cases Admitted During Initial Attacks

	Number of Cases	Admitted with Initial Attacks	Per Cent
Female	13	4	30.7
Male	18	11	61.0
Totals	31	15	48.4

TABLE 4—Cases Presenting Aversion for Fatty Foods

	Number of Cases	Aversion for Fats	Per Cent
Female	13	5	38.4
Male	18	2	11.1
Totals	31	7	22.5

and polymorphonuclear leukocyte blood cell counts. The average leukocyte count for the thirty-one cases was 15,600 white blood cells per cubic millimeter of blood, with an average of 84.6 per cent polymorphonuclear leukocytes. There were four patients with counts under 11,000 white blood cells per cubic millimeter of blood, and five patients with less than 80 per cent of polymorphonuclear leukocytes.

The cases in this series showed a high incidence of pain in the right upper quadrant of the abdomen but a low incidence of excruciating colic-like pain. There were two patients without abdominal pain, and in only ten of the thirty-one patients was the pain of excruciating intensity. Tenderness and rigidity in the right upper quadrant of the abdomen were present in all but two of the thirty-one patients (table 5). Radiation of pain through to the back was present in 63.3 per cent of the patients, while girdling pain occurred in only 20.6 per cent and right scapular pain in 39.3 per cent of the cases. Jaundice was noted in three patients on admission to the hospital, and five others gave a history of previous attacks. Thus, eight of thirty-one, or 25.8 per cent, of the patients at one time or another had been jaundiced. Blalock pointed out that jaundice was almost as common in patients without stones as it was in patients with stones in the gallbladder. Thirty-seven per cent of Blalock's patients with acute and chronic noncalculous cholecystitis were jaundiced, and 44 per cent with stones in the gallbladder also displayed

reported by the pathologist. The microscopic diagnoses on these tissues were acute suppurative cholecystitis in ten cases, gangrene of the gallbladder in three cases, acute hemorrhagic cholecystitis in one case, phlegmonous cholecystitis in one case, and acute ulcerative cholecystitis in another case. Only three of the sixteen pathological reports bore notations significant of previous inflammation, as evidenced by round and plasma cell infiltration and muscular fibrosis, and only one of these three patients gave a history of a known previous attack of gallbladder disease. The operative notes on the fifteen cases in which no specimen was obtained showed nine patients with a gross diagnosis of gangrene of the gallbladder, one of which was thought to be due to a gas bacillus infection, and six patients with the diagnosis of acute suppurative cholecystitis. If the gross changes are grouped with the microscopic changes, the distribution of the types of lesions is as follows: acute suppurative cholecystitis, sixteen cases; gangrene

TABLE 6—Patients with Perforated Gallbladder

	Admission Temperature, F.	Duration of Symptoms Before Hospitalization
Case 13	104	20 days
Case 16	102.8	5 days
Case 20	102	35 days intermittently
Case 28	103	21 days
Case 29	104	30 to 40 days intermittently
Case 30	102	6 days

TABLE 7—Mortality Rate Male and Female

	Number of Cases	Lived	Died	Mortality, per Cent
Acute noncalculous cholecystitis, male	18	15	3	16.6
All types of acute cholecystitis, male	101	85	16	15.8
Acute noncalculous cholecystitis, female	11	13	0	0.0
All types of acute cholecystitis, female	278	262	16	5.8

of the gallbladder, twelve cases, and one case each of acute hemorrhagic cholecystitis, phlegmonous cholecystitis and acute ulcerative cholecystitis.

It is important to call attention to the high incidence of perforation in this series of cases, particularly since many surgeons advocate delay in operating on gallbladder disease during its acute phase. Perforation occurred in six of thirty-one, or 19.4 per cent, of the cases, five

of which were in males. It is interesting to note that all the patients with perforation gave a clinical history of several days' duration and had a temperature range to at least 102 F. Our experience has been that perforation must be considered a likely possibility in those cases presenting a sustained temperature range over 102 F. for thirty-six hours or longer. Table 6 shows the admission temperature of the patients in whom perforation had taken place and the notes relating to the duration of symptoms prior to hospital admission.

It has frequently been stated that the death rate for gallbladder disease is higher in males than in females. Table 7 corroborates this observation and shows that all three deaths were of men.

## COMMENT

Rosenow,<sup>6</sup> C. H. Mayo,<sup>7</sup> Rolleston,<sup>8</sup> A. L. Wilkie,<sup>9</sup> D. P. D. Wilkie,<sup>10</sup> Rehfuess and Nelson<sup>11</sup> and others believe that cholecystitis is often the result of hematogenous bacterial infection of the wall of the viscus, while Graham and his co-workers<sup>12</sup> think that cholecystitis is often the result of invasion of the wall of the gallbladder through the lymphatic channels from the liver. Granting the validity of these two theories, stones and cystic duct obstruction are unnecessary factors in the production of an acute inflammatory lesion, whether it is suppurative or gangrenous. Thus, an embolus to the cystic artery or one of its branches may produce a gangrenous lesion in a previously normal gallbladder, or a suppurative noncalculous cholecystitis may follow invasion of the wall by bacteria which enter through the cystic artery or lymphatics.

We believe that acute noncalculous cholecystitis is a distinct etiologic entity, produced by hematogenous infection rather than by obstruction of the cystic duct. The syndrome resembles an infection of hematogenous origin in that there is no predilection for either sex or for any one particular age group (table 2). Then too, almost one third of the patients gave histories or showed signs of a focal infection which might have served as the primary source of the gallbladder infection. Furthermore, the infrequent history of previous attacks and the low incidence of the usual prodromal symptoms of aversion for fats, indigestion and pyrosis lead us to believe that this type of gallbladder disease differs greatly in etiology and pathogenesis from acute calculous cholecystitis with cystic duct block (tables 3 and 4).

## SUMMARY

1. Thirty-one cases of acute noncalculous cholecystitis reported from a series of 379 cases of acute cholecystitis gives an incidence of 8.2 per cent.

2. Fifty-eight per cent of the patients were males.

3. Aversion for fatty foods, indigestion, belching, and a history of previous attacks are not as common in patients with acute noncalculous cholecystitis as in those with acute calculous cholecystitis.

4. Acute noncalculous cholecystitis is a disease accompanied by higher temperature range, greater incidence

of chills, greater morbidity and a greater incidence of perforation than other forms of acute cholecystitis.

5. It is our belief that acute noncalculous cholecystitis is produced by a hematogenous infection rather than by cystic duct obstruction.

6. The mortality in this group of thirty-one cases was 9.6 per cent. All deaths occurred in male patients.

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## ZINC IONIZATION IN NASAL ALLERGY

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My purpose in this communication is:

1. To evaluate the clinical results obtained through zinc ionization of the nasal mucous membrane of twenty-five individuals suffering from hyperesthetic rhinitis, and ten with seasonal hay fever, the observations having been carried on over a period of fifteen months.

2. To make a comparison of the end results obtained in this series with the end results obtained by the use of escharotics in a series of twenty individuals suffering with hyperesthetic rhinitis and ten others with hay fever.

The technic employed for ionization was the application of a galvanic current of from 15 to 20 milliamperes to a solution of zinc sulfate for a period of from fifteen to twenty minutes. The solution of zinc sulfate was introduced into the nasal chamber either in the form of a jelly or with gauze packing. One side of the nose was treated during one sitting, a period of from five to seven days being allowed to elapse before the second side was treated. An inexpensive battery set with an ammeter was used to create current. Hurd<sup>1</sup> has observed that while each apparatus has its adherents, it makes no difference clinically or histologically which type of apparatus is used. Zinc was the sole electrolyte employed, as no advantage is apparent in the use of mixed electrolytes described by Warwick.<sup>2</sup>

## HISTOLOGIC OBSERVATIONS

Sections of mucous membrane taken at varying periods following ionization show immediate changes in the surface epithelium, varying from complete destruction of the epithelium to simple inflammatory processes attended by the usual cellular infiltration and vascular changes found in any instance of inflammation of mucous membrane. Sections taken periodically after ionization reveal that regeneration takes place in periods varying from three months to three weeks. The tendency to fibrosis was not marked, the subepithelial stroma showing little tendency to thickening after resolution was complete. Cilia usually remain absent, the surface of the epithelium being pseudostratified in form. McMahon<sup>3</sup> has observed similar epithelial changes following ionization of nasal mucosa in dogs, but fibrosis was more marked in these animals than in the series just described. Concerning the effects of ionization on cilia, one must recall that Hansel<sup>4</sup> has

6. Rosenow, E. C.: Coll. Papers of Mayo Clin 8:222, 1916.

7. Mayo, C. H.: Ann. Surg. 81:955 (May) 1925.

8. Rolleston, Humphry: Lancet 1:1207 (June 6) 1925.

9. Wilkie, A. L., quoted by Wilkie, D. P. D.: Proc. Internat. Assem. Inter-State Post-Grad. M. A. North America (1929) 5:373, 1930.

10. Wilkie, D. P. D.: Personal communication to the authors.

11. Rehfuess, M. E., and Nelson, G. M.: Am. J. Digest. Dis. & Nutrition 1:759 (Jan.) 1935.

12. Graham, E. A.; Cole, W. H.; Copper, G. H., and Moore, Sherwood: Diseases of the Gall Bladder and Bile Ducts, Philadelphia, Lea & Febiger, 1928, p. 119.

1. Hurd, L. M.: Treatment of Hay Fever and Hyperesthetic Rhinitis by Ionization, Arch. Otolaryng. 22:416-424 (Oct.) 1935.

2. Warwick, H. L.: Laryngoscope 44:173 (March) 1934.

3. McMahon, B. J.: Late Changes in Mucosa of Frontal Sinuses and Nose of Dogs Following Ionization with Zinc Sulfate, Arch. Otolaryng. 22:454 (Oct.) 1935; Tr. Am. Laryng., Rhin. & Otol. Soc. 1935, pp. 147-159, Ann. Oto., Rhin. & Laryng. 43:643 (Sept.) 1934.

4. Hansel, F. K.: Ann. Otol. Rhin. & Laryng. 39:510 (June) 1930.

shown that one of the histologic effects of allergic nasal disease itself is the loss of cilia.

The histologic changes following zinc ionization are similar to those following the application of trichloroacetic acid or phenol to the nasal mucous membrane. It was impossible to differentiate mucous membrane that had been ionized from mucous membrane that had been treated with escharotic, such as trichloroacetic acid or phenol. The periods of regeneration following ionization and application of escharotics were also similar.

#### CLINICAL OBSERVATIONS

**Hyperesthetic Rhinitis.**—Twenty-five persons suffering with nonseasonal allergic rhinitis were treated with zinc ionization. All gave typical allergic histories, having had trouble for from one month to seven years. All showed the usual pale waterlogged mucous membrane but at the time of treatment none had either allergic or infectious polyps, and none showed evidences of secondary sinus infection found so commonly in this type of allergic nasal disease. Seven had skin sensitivity to certain foods and inhalants, but, as usual in hyperesthetic rhinitis, skin tests were of questionable value. Ionization had no effect on the clinical course of the disease in twenty of the patients; i. e., 80 per cent. Five, or 20 per cent, were free from symptoms for from five to eleven months. The nasal mucous membrane of these five patients became pink and otherwise normal to macroscopic examination. These periods of remission are much longer than the usual periods of spontaneous remission observed frequently in the course of untreated hyperesthetic rhinitis with proved nonseasonal nasal allergy.

The records of twenty patients treated with trichloroacetic acid or phenol were examined in order to compare the results obtained with simple escharotics with those obtained with ionization. In all cases the escharotics were applied to the anterior tips of both middle turbinates, the medial and anterior lateral surfaces of both inferior turbinates, and both sides of the anterior septal wall. Of ten patients treated with phenol, four, or 40 per cent, had periods of remission prolonged for from five to nineteen months. Of the ten treated with trichloroacetic acid three, or 30 per cent, had periods of remission which lasted for from four months to two and one-half years.

**Hay Fever.**—The usual clinical course of hay fever of ten individuals was in no way altered by ionization. These ten individuals suffered with the autumnal type of seasonal nasal allergy and all showed definite skin sensitivity to ambrosial pollens. They had had seasonal symptoms for periods varying from three to thirteen years. Unsuccessful attempts had been made to desensitize six of these individuals by pollen injections during previous years. Four had received no previous treatment. Five of the ten had had pollen asthma complicating the hay fever prior to ionization. One developed pollen asthma following ionization, but so many varying factors presented themselves in an attempt to interpret the relationship of ionization to this complication that no conclusion could be drawn. The negative clinical results obtained through ionization in hay fever corresponded to those recently reported by Ramirez.<sup>5</sup> Ionization was instituted in all cases after the onset of symptoms, as recommended by Tobey.<sup>6</sup> No histologic

sections were made of the nasal mucous membrane of patients treated by ionization or escharotics because of the negative end results obtained. A group of hay fever patients treated with escharotics in the manner just described also gave uniformly negative results.

#### COMPLICATIONS FOLLOWING IONIZATION

1. **Anosmia.**—Two patients suffering from hyperesthetic rhinitis developed anosmia. Both of these patients had a normal sense of smell before ionization but lost the ability to detect unpleasant, pungent or mild, pleasant odors within twenty-four hours after ionization. Both complained of associated taste disturbances. This unfortunate complication persisted for four months with one patient and for seven months with the other. Both were private patients, and as neither was benefited by the ionization treatment these complications resulted in most unpleasant situations. My own relief was even greater than that of the patients' when the anosmia proved to be transitory. A period of seven months can seem interminable under certain circumstances.

It should not be forgotten that many persons suffering from hyperesthetic rhinitis have disturbances of the sense of smell resulting from the disease process itself. The rhinologist, therefore, for his own protection, should test the patient's sense of smell before employing ionization, just as the ophthalmologist tests vision before removing a foreign body.

2. **Sphenopalatine Neuritis.**—One patient developed a unilateral headache referred from the eye on the affected side to the lower occipital region and down into the neck and shoulders. The pain was typical of the syndrome described by Sleuder. It persisted for three and one-half months with short periods of remission following application of cocaine to the sphenopalatine foramen. The patient refused to submit to alcohol injection.

No complications have ever been noted from the use of escharotics.

#### CONCLUSIONS

1. The histologic effects of ionization of the nasal mucous membrane do not differ from those resulting from the application of escharotics to the nasal mucous membrane. In neither instance is there marked evidence of fibrosis.

2. The clinical course of hyperesthetic rhinitis was influenced in only 5 per cent of twenty-five patients who were treated with ionization. Slightly better results were obtained through the use of escharotics.

3. The clinical course of hay fever was not altered by the use of either ionization or escharotics.

4. Ionization of the nasal mucous membrane carries a definite risk of complications that do not present themselves through the use of escharotics.

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**Vectors of Yellow Fever.**—When it was first proven that yellow fever is transmitted by *Stegomyia fasciatus*, now called *Aedes aegypti*, it was believed that this mosquito was the only vector of the disease. We now know that there are more than a dozen mosquitoes that transmit the virus under laboratory conditions, some of them quite readily. We know also that yellow fever is endemic in areas where *Aedes aegypti* do not exist and we do not yet know what the vector in those areas is.—Lloyd, B. J.: Public Health Significance of Our Newer Knowledge of Yellow Fever, *Southern Medical Journal* 29:533 (May) 1936.

5. Ramirez, M. A.: Disappointing Results from the Ionization Treatment for Hay Fever, *J. A. M. A.* 106:281 (Jan. 25) 1936.

6. Tobey, H. G.: Experiences in Ionization Treatment of Nasal Mucous Membrane, *Tr. Am. Laryng., Rhin. & Otol. Soc.*, 1935, pp. 302-304.

# Clinical Notes, Suggestions and New Instruments

## SIMPLIFIED APPARATUS FOR THE ADMINISTRATION OF PARENTERAL FLUID

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The production of a reliable supply of parenteral fluids, in otherwise adequately equipped hospitals, has been hindered by the lack of simple apparatus in which chemically pure solutions can be dispensed safely and economically. The apparatus<sup>1</sup> illustrated (fig. 1) was designed to provide easy sterilization, safe storage under hermetic seal, and ready administration from the original container.

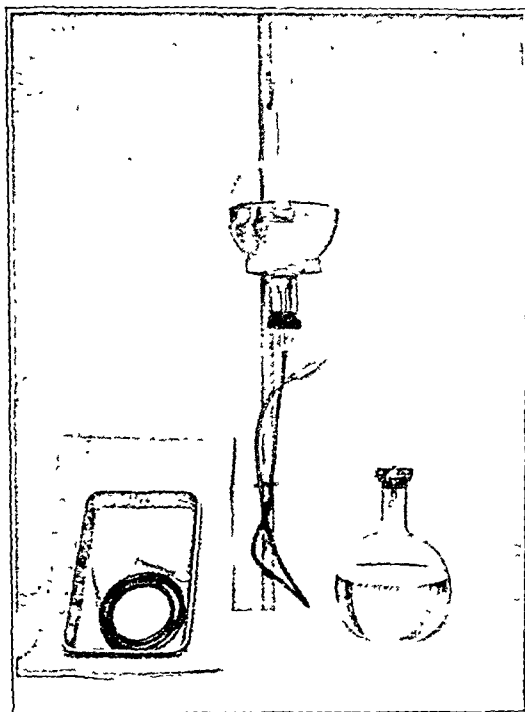


Fig. 1.—Apparatus for administration of parenteral fluid. Preparation, sterilization, storage and administration of fluid are accomplished in individual flasks. The necessary glassware, tubing and needles are sterilized in a central supply room.

The new apparatus consists of a stainless steel stopper,<sup>2</sup> which fits a rubber bushing<sup>3</sup> inserted into the mouth of a thick-walled, short necked 1,500 cc. pyrex flask.<sup>1</sup> The flask is emptied by substituting for the stem of the steel stopper a pyrex tube, which is provided at one end with a capillary orifice which acts as an air valve and at the other end with the usual rubber tubing connector.

When the stem of the stopper is partially inserted into the rubber bushing, the channel cut into its lower third provides an adequate vent for the escape of air and steam during sterilization (fig. 2 A). On removal from the autoclave the stopper is pushed the remainder of the way into the bushing, forming a hermetic seal (fig. 2 B). The contraction of the contents of the flask during cooling produces a moderate vacuum, which aids in maintaining the seal. The inrush of air when the stopper is removed assures the user of the sterility of the contents of the flask.

<sup>1</sup>From the Surgical Clinic of the Peter Bent Brigham Hospital and the Laboratory of Surgical Research, Harvard Medical School.

<sup>2</sup>Made by Arthur H. Gerry, Boston.

<sup>3</sup>Made by H. O. West, Philadelphia.

The rubber bushing is molded of nontoxic, heat resistant rubber, which retains its resilience after repeated sterilization. The pyrex vent tube is sufficiently rugged to withstand the mechanical and thermal shock to which it may be subjected during ordinary usage.

### Directions for Making Various Solutions

No.	Solution	Chemicals in Stock Solution	Net Weight of Stock Solution	Cc. Added to Flask	Net Weight of Flask*
1	5% dextrose in distilled water	1,000 Gm. dextrose C. P.	2,355 Gm.	100	1,000 Gm.
2	10% dextrose in distilled water	1,000 Gm. dextrose C. P.	2,355 Gm.	200	1,085 Gm.
3	0.85% saline solution	170 Gm. sodium chloride C. P.	1,108 Gm.	50	1,040 Gm.
4	5% dextrose in 0.85% saline solution	(a) 1,000 Gm. dextrose C. P.	2,355 Gm.	100	1,000 Gm.
		(b) 170 Gm. sodium chloride C. P.	1,108 Gm.	50	
5	10% dextrose in 0.85% saline solution	(a) 1,000 Gm. dextrose C. P.	2,355 Gm.	200	1,085 Gm.
		(b) 170 Gm. sodium chloride C. P.	1,108 Gm.	50	
6	Ringer's solution	9.0 Gm. potassium chloride C. P.	1,145 Gm.	50	1,575 Gm.
		7.4 Gm. calcium chloride C. P.			
		209.8 Gm. sodium chloride C. P.			
7	50% dextrose	1,000 Gm. dextrose C. P.	2,406 Gm.	105	
8	50% sucrose	1,000 Gm. sucrose C. P.	2,478 Gm.	105	

\* Allowance has been made for a 5 per cent loss during sterilization.

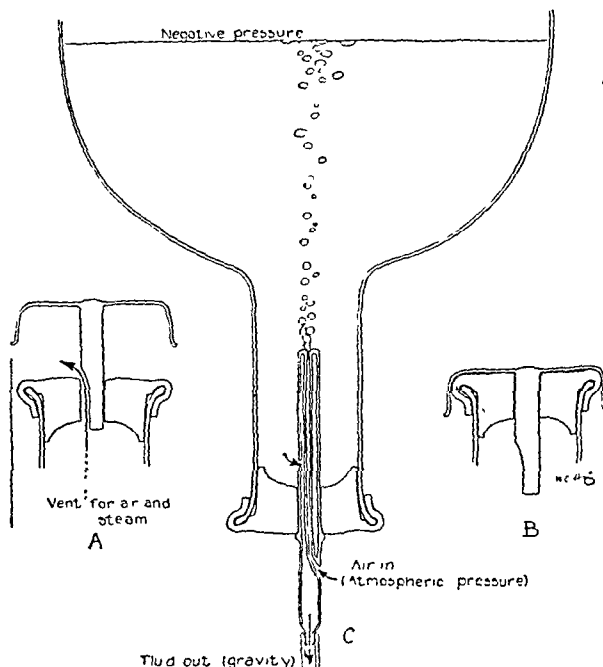


Fig. 2.—A, channel in stopper permits escape of air and steam during sterilization. B, air enters capillary orifice to relieve negative pressure within the inverted flask. C, vacuum seal produced by inserting stopper into bushing and permitting flask to cool.

After the steel stopper has been pulled from the flask by a twisting motion and the inrush of air has been noted, the vent tube is pushed into the hole in the rubber bushing as far as the shoulder. The flask is then inverted and hung in the split ring.

bracket\* (fig. 2 C). The rubber tube and needle are filled with solution and the infusion may be started.

The technic of cleaning the glassware, rubber goods and needles described in a previous communication must be followed rigidly.<sup>5</sup> The preparation of the solution can be facilitated by using the technic illustrated (fig. 2). Fresh, singly distilled water is drawn from the pyrex carboy, which is used to collect the immediate supply only. The carboy is drained each night and sterilized with live steam each morning.

Isotonic sodium chloride solution (0.85 per cent) is prepared from a fresh stock solution made by adding distilled water to 170 Gm. of chemically pure sodium chloride, previously weighed out in a counterbalanced flask, until a net weight of 1,108 Gm. has been reached. The flask is stoppered with a clean rubber stopper and shaken until solution is complete. This solution is then filtered, with the aid of suction, directly into a 300 cc. pyrex buret. Fifty cubic centimeters of the filtrate is measured

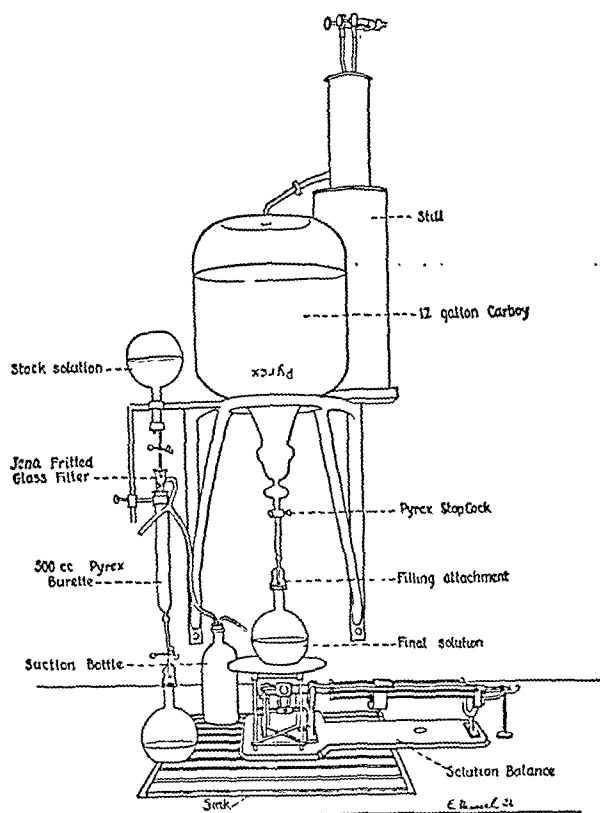


Fig. 3.—Simple technic for the preparation of solutions, which avoids mass filtration and volumetric transfer of fluid.

into a counterbalanced 1,500 cc. pyrex flask, and distilled water is added to a net weight of 1,049 Gm.<sup>6</sup> A clean rubber bushing is fitted into the mouth of the flask, its skirt is turned down, and the stem of the steel stopper is partially inserted into the bushing.

The flasks are then autoclaved for twenty minutes at 250 F. After sterilization the steam supply to the autoclave is shut off and the autoclave permitted to cool to 180 F. before it is opened. In this way the concentration of solution resulting from the ebullition of steam that follows sudden relief of pressure is avoided. As the flasks are removed from the autoclave, the steel stoppers are pushed in to complete the seal.

The sterile solutions can be stored indefinitely without impairing their value as safe parenteral fluids. If a sufficient supply of sterile sets of pyrex vent tubes, rubber tubing and needles is kept on hand, the solutions are instantly available and rational parenteral therapy is constantly at the disposal of the clinician.

4. Made by J. H. Emerson, Cambridge, Mass.

5. Walter, C. W.: *Economical Intravenous Therapy*, J. A. M. A. 104: 1688-1690 (May 11) 1935.

6. Other solutions are prepared as shown in the accompanying table.

## Special Article

### TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1935

#### TWENTY-FOURTH ANNUAL REPORT

This report deals with the same ninety-three cities that have been discussed in the corresponding articles for the years beginning with 1930. The number of deaths from typhoid during 1935 in each city (except Scranton, as explained in a note to table 2) has been supplied by the respective health department. The United States Bureau of the Census is working out a new method for estimating the populations of the large cities in view of the extraordinary changes in urban and rural distribution since 1930; but as such estimates are not yet available the rates in the present article are based on the same population figures as were used for the 1934 rates; namely, the estimates for midyear 1933 as computed by the Bureau of the Census according to a method described in our last year's report.

TABLE 1.—Death Rates of Fourteen Cities in New England States from Typhoid per Hundred Thousand of Population

	1931-1935	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910	1935	1934	1933
Fall River.....	0.2*	2.2	2.3	8.5	13.4	13.5	0.9	0.0	0.0
Lynn.....	0.2	1.5	1.6	3.9	7.2	14.1	1.0	0.0	0.0
Bridgeport.....	0.3	0.5	2.2	4.8	5.0	10.3	0.0	0.0	0.7
Somerville.....	0.4	1.3	1.6	2.8	7.9	12.1	0.0	0.0	1.2
Waterbury.....	0.4	1.2	1.0	8.0	18.8	....	2.0	0.0	0.0
Boston.....	0.6	1.2	2.2	2.5	9.0	16.0	0.5	0.9	0.2
Worcester.....	0.6	1.0	2.3	3.5	5.0	11.8	0.5	0.0	0.5
New Haven.....	0.7	0.6	4.4	6.8	18.2	30.8	0.0	0.0	1.2
Cambridge.....	0.9	2.1	4.3	2.5	4.0	9.8	0.0	0.9	1.8
Lowell.....	1.0*	2.6	2.4	5.2	10.2	13.9	1.0	0.0	1.0
Springfield.....	1.0	0.4	2.0	4.4	17.6	19.9	0.0	0.0	0.6
New Bedford.....	1.1*	1.5	1.7	6.0	15.0	16.1	0.0	1.8	1.8
Providence.....	1.1	1.3	1.8	3.8	8.7	21.5	0.8	1.2	1.2
Hartford.....	1.2	1.3	2.5	6.0	15.0	19.0	0.6	0.6	0.6

\* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1933, was made by the Census Bureau.

Deaths from paratyphoid, when these were specified in the reports made to us by a health department, have been excluded from the deaths on which we have based the typhoid death rate. This follows the distinction set by the latest edition of the *Manual of International Causes of Death* (edition 4, 1931); in the previous edition (1921) typhoid and paratyphoid were grouped together. The paratyphoid deaths thus excluded, beginning with 1931, have been as follows: Cleveland, one paratyphoid death in 1931 (thirty-one typhoid deaths); Jacksonville, one paratyphoid death in 1933 (one typhoid death also in that year);<sup>1</sup> Knoxville, two paratyphoid deaths in 1935 in addition to six typhoid deaths; New Haven, one paratyphoid death in 1934 and one in 1935 (no typhoid death in either year); New York, one paratyphoid death in 1931 (seventy-

The preceding articles in this series were published in *THE JOURNAL*, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389; March 14, 1925, p. 813; March 27, 1926, p. 948; April 9, 1927, p. 1148; May 19, 1928, p. 1624; May 18, 1929, p. 1674; May 17, 1930, p. 1574; May 9, 1931, p. 1576; April 30, 1932, p. 1550; May 13, 1933, p. 1491; May 19, 1934, p. 1677, and June 8, 1935, p. 2093.

1. The Jacksonville typhoid death rate for 1933 was erroneously figured without excluding the paratyphoid death. Its correct 1933 rate should therefore be 0.7 instead of 1.4. The following corrections should be made in the tables in the 1933 article: tables 3 and 9, change Jacksonville rate to 0.7; table 10, for 1933 the number of cities with rates 1.0 to 1.9 is 18, with rates 0.1 to 0.9 is 34; table 11, third footnote, total typhoid deaths number 469; table 12, South Atlantic typhoid deaths number 54 and the group rate is 2.28.

six typhoid);<sup>2</sup> Oakland, two paratyphoid deaths in 1934 (also two typhoid deaths); Wichita, two paratyphoid deaths in 1935 (no typhoid deaths); Wilmington, one paratyphoid death in 1932 (also one typhoid death in that year).

The problem of including in the rates for each city the typhoid rate for nonresidents is still conspicuous.

TABLE 2.—*Death Rates of Eighteen Cities in Middle Atlantic States from Typhoid per Hundred Thousand of Population*

	1931-1935	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910	1935	1934	1933
Jersey City.....	0.2	0.9	2.7	4.5	7.2	12.6	0.0	0.0	0.3
Newark.....	0.3	0.9	2.3	3.3	6.8	14.6	0.0	0.2	0.4
Reading.....	0.4	1.6	6.0	10.0	31.9	42.0	0.9	0.0	0.0
Rochester.....	0.4	1.7	2.1	2.9	9.6	12.8	0.3	0.0	0.3
Buffalo.....	0.6	2.7	3.9	8.1	15.4	22.8	0.5	0.3	0.3
Utica.....	0.6	1.1	3.9*	...	...	...	1.0	0.0	0.0
Yonkers.....	0.7	0.5	1.7	4.8	5.0	10.3	1.4	0.0	0.0
New York.....	0.8	1.3	2.6	3.2	8.0	12.5	0.5	0.6	0.9
Syracuse.....	0.8	0.8	2.3	7.7	12.3	15.6	0.5	0.5	1.8
Elizabeth.....	0.9	1.6	2.4	3.3	8.0	16.6	0.0	0.0	0.0
Philadelphia.....	0.9	1.1	2.2	4.0	11.2	41.7	0.9	0.9	0.6
Pittsburgh.....	0.9	2.4	3.9	7.7	15.9	65.0	0.6	1.5	0.1
Paterson.....	0.9	1.0	3.3	4.1	9.1	19.3	0.0	0.7	0.0
Erie.....	1.0	0.9	2.3	6.9	49.0	46.6	0.0	1.7	0.9
Albany.....	1.1	1.8	5.6	8.0	18.6	17.4	0.8	0.8	0.8
Trenton.....	1.1	2.1	8.2	8.6	22.3	28.1	0.0	0.8	2.4
Scranton.....	1.4	1.8	2.4	3.8	9.3	31.5	0.0†	0.0	3.4
Camden.....	2.8	4.4	5.9	4.9	4.5	4.0	2.5	1.7	3.3

\* Incomplete data.

† Typhoid deaths for Scranton furnished by Pennsylvania Department of Health, Harrisburg.

In twenty-four of the ninety-three cities we are informed that one third or more of the typhoid deaths were in nonresidents. These are indicated in table 9 and should be also referred to in examining tables 1 to 8.<sup>3</sup> Complete data are unavailable for a few cities as described (tables 2 to 8, "incomplete data") in the report covering the year 1932.

Six of the large New England cities had no typhoid deaths in 1935 (table 1), four of them for the second year in succession. The quinquennial average 1931-1935 is particularly interesting since it shows that all but two of the New England cities (New Haven, Springfield) had lower average rates than for the preceding five years. Bridgeport has had the lowest

TABLE 3.—*Death Rates of Nine Cities in South Atlantic States from Typhoid per Hundred Thousand of Population*

	1931-1935	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910	1935	1934	1933
Baltimore.....	1.4	3.2	4.0	11.8	23.7	35.1	1.5	1.3	0.4
Wilmington.....	1.5	3.1	4.7	25.8*	23.2*	33.0	0.9†	1.9	1.9
Jacksonville.....	1.7	4.4	...	...	...	...	0.0	1.4	0.7†
Miami.....	2.2	3.5	...	...	...	...	2.8	1.8	2.7
Richmond.....	2.5	1.9	5.7	9.7	15.7	34.0	2.7	3.8	1.6
Washington.....	2.6	2.8	5.4	9.5	17.2	36.7	2.6	1.6	3.6
Tampa.....	3.0	3.8	19.1	43.9*	...	...	6.6	0.0	1.8
Norfolk.....	4.2	2.2	2.8	8.8	21.7	42.1	5.4†	5.4	3.8
Atlanta.....	7.2	11.1	14.5	14.2	31.4	58.4	4.6	3.9	6.0

\* Incomplete data.

† Rate computed from population as of April 1, 1930, as no estimate for July 1, 1933, was made by the Census Bureau.

‡ This rate in our two previous articles was given as 1.4, owing to the erroneous inclusion of one paratyphoid death.

average rate for the ten-year period 1926-1935. The New England group as a whole (population 2,624,805) recorded for 1935 the lowest group rate (0.49) yet reached by that group and also the lowest ever recorded

2. The paratyphoid death in New York in 1931 was included by mistake in the total deaths on which the typhoid rate was calculated. Its exclusion does not change the New York rate for the year (1.1) or the Middle Atlantic group rate (1.06) but it lessens by one the totals for the country in tables 11 and 12 in the article covering the year 1931.

3. The problem of the nonresident has been discussed at some length in our previous reports; for example, J. A. M. A. 100:1491 (May 13) 1933 and 98:1550 (April 30) 1932.

by any of the eight geographic divisions. This is the seventh year of progressive decline in the typhoid group rate for the New England cities (table 12).

The Middle Atlantic cities (table 2) have likewise had for the past four years a group rate under 1.0, thus continuing a progressive decline. As in 1934, seven of the eighteen cities report the complete absence of typhoid deaths, Elizabeth for the fourth consecutive year. Scranton, which had the highest rate of the group in 1933, reported no typhoid deaths in 1934 or 1935. Jersey City likewise completes its second consecutive year without a typhoid death. Pittsburgh's rate (0.6) is better than in 1934, although not equal to the conspicuously low rate (0.1) for 1933. The

TABLE 4.—*Death Rates of Eighteen Cities in East North Central States from Typhoid per Hundred Thousand of Population*

	1931-1935	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910	1935	1934	1933
Grand Rapids.....	0.2	1.0	1.9	0.1	25.5	29.7	0.0	0.0	0.0
Milwaukee.....	0.2	0.8	1.6	6.5	13.6	27.0	0.0	0.2	0.3
Chicago.....	0.4	0.6	1.4	2.4	8.2	15.8	0.4	0.6	0.3
Detroit.....	0.6	1.3	4.1	8.1	15.4	22.8	0.3	1.1	0.6
Flint.....	0.7	1.6	4.6	22.7	18.8	46.9	0.6	1.2	0.0
South Bend.....	0.7	...	...	...	...	...	0.9	1.8	1.0
Akron.....	0.8	1.5	2.4	10.6	21.0	27.7*	0.7	0.4	1.1
Dayton.....	0.8	1.9	3.3	9.3	14.8	22.5	1.0	1.0	0.5
Canton.....	0.9	1.4	3.3	8.9	...	...	0.9	0.9	0.0
Peoria.....	0.9	0.2	3.7	5.7	16.4	15.7*	0.0	0.0	0.9
Cleveland.....	1.1	1.0	2.0	4.0	10.0	15.7	0.6	0.8	0.5
Youngstown.....	1.1	1.1	7.2	19.2	29.5	35.1	0.0	0.6	2.3
Indianapolis.....	1.2	2.7	4.6	10.3	20.5	30.4	1.3	1.1	0.5
Toledo.....	1.3	3.0	5.8	10.6	31.4	37.5	1.3	1.3	1.3
Cincinnati.....	1.4	2.5	3.2	3.4	7.8	30.1	1.2	1.5	0.9
Evansville.....	1.9	6.2	5.0	17.5	32.0	35.0	4.7	1.9	0.0
Columbus.....	2.0	2.1	3.5	7.1	18.8	40.0	2.0	2.0	1.7
Fort Wayne.....	2.2	4.2	12.9	7.3	...	...	0.0	6.7	0.0

\* Incomplete data.

four cities in this group with a population of more than half a million all had rates under 1.0, New York for the fourth consecutive year, Philadelphia and Buffalo for the third. The typhoid rate in Camden still ranked highest in 1935, as did its average for the quinquennial period.

One of the South Atlantic cities (Jacksonville) reports no typhoid deaths in 1935. Atlanta's rate (4.6), while higher than 1934 (3.9), is still well below the other rates of recent years and the city again, as in 1934, no longer occupies its long held position in the highest rank in the country. Atlanta hospitals serve a 40-mile radius from the city, so that the proportion of nonresident deaths is large. Baltimore had about the same rate (1.5) in 1935 as in 1934 (1.3), but four

TABLE 5.—*Death Rates of Six Cities in East South Central States from Typhoid per Hundred Thousand of Population*

	1931-1935	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910	1935	1934	1933
Louisville.....	2.3	3.7	4.9	9.7	19.7	52.7	1.6	2.5	1.9
Birmingham.....	3.9	8.0	10.8	31.5	41.3	41.7	4.0	5.8	4.0
Chattanooga.....	4.7	8.0	18.6	27.2	35.8*	...	2.4	8.1	3.2
Nashville.....	5.6	18.2	17.8	20.7	40.2	61.2	7.0	2.6	7.6
Knoxville.....	5.7	10.7	20.8	25.3*	...	...	5.4	0.9	7.1
Memphis.....	7.9	9.3	18.9	27.7	42.5	35.3	5.0	8.4	7.6

\* Incomplete data.

of the twelve deaths are stated to be in nonresidents. The group rate for the South Atlantic cities (2.58) is slightly higher than for the three preceding years, but its quinquennial average 1931-1935 shows a marked improvement over the preceding five year period.

After the decided increase in typhoid mortality which occurred in the cities of the East North Central group



(table 4) in 1934, the rate has dropped back almost to the 1933 level, with fifty-eight deaths in 1935 as against eighty-eight and fifty-four in 1934 and 1933 respectively. Five cities had clear typhoid records in 1935, and twelve had rates under 1.0 as against eight in 1934. Three cities had higher typhoid rates in 1935 than in 1934, the most noteworthy increase being in Evansville

TABLE 6.—*Death Rates of Nine Cities in West North Central States from Typhoid per Hundred Thousand of Population*

	1931- 1935	1926- 1930	1921- 1925	1916- 1920	1911- 1915	1906- 1910	1935	1934	1933
St. Paul.....	0.7	1.4	3.4	3.1	9.2	12.8	0.3	0.0	1.4
Wichita.....	0.7	1.2	6.3	...	...	...	0.0	0.0	1.7
Minneapolis.....	0.8	0.8	1.9	5.0	10.6	32.1	1.2	1.2	0.2
Omaha.....	0.9	1.3	3.3	5.7	14.9	40.7	0.0	0.9	0.5
Duluth.....	1.0	1.1	1.7	4.4	19.8	45.5	1.0	1.0	1.0
Kansas City, Kan.....	1.1	1.7	5.0	9.4	31.1	74.5*	1.6	1.6	0.8
Kansas City, Mo.....	1.5	2.8	5.7	10.6	16.2	35.6	1.0	1.4	2.4
St. Louis.....	1.6	2.1	3.9	6.5	12.1	14.7	0.7	1.7	2.2
Des Moines.....	2.1	2.4	2.2	6.4	15.9	23.7	2.1	6.2	2.0

\* Incomplete data.

following four years of little or no typhoid. Fort Wayne again has a clear record in 1935 after its bad year in 1934. Detroit has the lowest rate in its history (0.3). Chicago also continues to have a very low rate.

TABLE 7.—*Death Rates of Eight Cities in West South Central States from Typhoid per Hundred Thousand of Population*

	1931- 1935	1926- 1930	1921- 1925	1916- 1920	1911- 1915	1906- 1910	1935	1934	1933
Tulsa.....	1.1	8.3	16.2*	...	...	...	0.7	2.7	0.0
Houston.....	3.2	4.8	7.6	14.2	38.1	49.5*	2.2	2.8	4.0
San Antonio.....	4.2	4.6	9.3	23.3	29.5	35.9	3.3	4.9	4.9
Oklahoma City.....	4.3	7.4*	...	...	...	...	2.5	5.9	3.4
Fort Worth.....	4.6	5.9	6.1	16.3*	11.9	27.8	1.2	5.9	7.6
El Paso.....	4.9	9.1	10.8	30.7	42.8	...	7.6	3.8	2.8
Dallas.....	5.4	7.3	11.2	17.2	...	...	2.9	4.3	5.3
New Orleans.....	9.6	9.9	11.6	17.5	20.9	35.6	7.4	8.9	9.1

\* Incomplete data.

The six East South Central cities (table 5) had forty-nine typhoid deaths in 1935 as against sixty-one in both 1933 and 1934. Knoxville and Nashville, which showed decreases in 1934, had much higher rates in

TABLE 8.—*Death Rates of Eleven Cities in Mountain and Pacific States from Typhoid per Hundred Thousand of Population*

	1931- 1935	1926- 1930	1921- 1925	1916- 1920	1911- 1915	1906- 1910	1935	1934	1933
Long Beach.....	0.2	1.1	2.1*	...	...	...	0.0	0.6	0.6
Seattle.....	0.6	2.2	2.6	2.9	5.7	25.2	0.8	0.6	0.8
Tacoma.....	0.7	1.8	3.7	2.9	10.4	19.0	0.0	0.0	0.9
Los Angeles.....	0.8	1.5	3.0	3.6	10.7	19.0	0.9	1.0	0.6
Portland.....	0.8	2.3	3.5	4.5	10.8	23.2	1.6	0.6	0.0
San Francisco.....	0.8	2.0	2.8	4.6	13.6	26.3	0.8	0.1	0.1
Oakland.....	1.0	1.2	2.0	3.8	8.7	21.5	1.7	0.7	0.7
Salt Lake City.....	1.0	1.9	6.0	9.3	13.2	41.1	1.4	1.4	0.0
San Diego.....	1.3	1.9	1.6	7.9	17.0	10.3	0.0	1.2	4.3
Spokane.....	1.4	2.2	4.4	4.9	17.1	50.3	0.8	2.6	0.9
Denver.....	1.8	2.6	5.1	5.8	12.0	37.5	0.7	1.4	2.7

\* Incomplete data.

1935. The other four cities reversed this picture. Louisville and Memphis record their lowest rates since 1930. Chattanooga dropped from 8.1 to 2.4. The group as a whole shows a notable diminution of the typhoid average for the last five years (table 12).

In the West North Central cities (table 6) the typhoid mortality in 1935 was considerably less than in 1934, twenty-three deaths as against forty. It is to be noted, however, that the population in this geographic

division is very close to that of the New England cities, while the number of typhoid deaths is nearly twice as great both for the years 1934 and 1935 (table 12) and for the quinquennial period. It is encouraging that the group rate for the West North Central cities for

TABLE 9.—*Death Rates from Typhoid in 1935*

Honor Roll: No Typhoid Death (Twenty-four Cities)			
Bridgeport	Jacksonville	New Haven	Somerville
Cambridge	Jersey City	Omaha	Springfield
Elizabeth	Long Beach	Paterson	Tacoma
Erie	Milwaukee	Peoria	Trenton
Fort Wayne	Newark	San Diego	Wichita
Grand Rapids	New Bedford	Scranton	Youngstown

First Rank: from 0.1 to 1.9 Deaths per Hundred Thousand (Forty-Seven Cities)					
Detroit.....	0.3	Tulsa.....	0.7	Lowell.....	1.0
Rochester.....	0.3*	Albany.....	0.8	Lynn.....	1.0
St. Paul.....	0.3	Providence.....	0.8	Utica.....	1.0*
Chicago.....	0.4	San Francisco.....	0.8†	Fort Worth.....	1.2
Boston.....	0.5	Seattle.....	0.8†	Minneapolis.....	1.2
Buffalo.....	0.5†	Spokane.....	0.8	Cincinnati.....	1.3
New York.....	0.5	Canton.....	0.9	Indianapolis.....	1.3
Syracuse.....	0.5	Fall River.....	0.9	Toledo.....	1.3
Worcester.....	0.5	Los Angeles.....	0.9†	Salt Lake City.....	1.4†
Cleveland.....	0.6†	Philadelphia.....	0.9	Yonkers.....	1.4
Flint.....	0.6	Reading.....	0.9	Baltimore.....	1.5†
Hartford.....	0.6	South Bend.....	0.9	Kansas City, Kan.....	1.6
Pittsburgh.....	0.6	Wilmington.....	0.9	Louisville.....	1.6
Akron.....	0.7†	Dayton.....	1.0*	Portland.....	1.6
Denver.....	0.7	Duluth.....	1.0	Oakland.....	1.7†
St. Louis.....	0.7	Kansas City, Mo.....	1.0		

Second Rank: from 2.0 to 4.9 (Fifteen Cities)

Columbus.....	2.0†	Camden.....	2.5†	Dallas.....	2.9†
Waterbury.....	2.0	Oklahoma City.....	2.5	San Antonio.....	3.3†
Des Moines.....	2.1	Washington.....	2.6	Birmingham.....	4.0†
Houston.....	2.2	Richmond.....	2.7	Atlanta.....	4.6†
Chattanooga.....	2.4	Miami.....	2.8†	Evansville.....	4.7

Third Rank: from 5.0 to 7.6 (Seven Cities)

Memphis.....	5.0†	Tampa.....	6.6	New Orleans.....	7.4†
Knoxville.....	5.4†	Nashville.....	7.0†	El Paso.....	7.6†
Norfolk.....	5.4				

\* All the typhoid deaths reported were stated to be in nonresidents.  
† One third or more of the reported typhoid deaths were stated to be in nonresidents.

1935 is for the first time under 1.0. Two of the nine cities, Omaha and Wichita, report no typhoid deaths in 1935, Wichita's being the second successive clear record and the fifth one in its history. Des Moines, after its abrupt rise in 1934, subsides to its 1933 level, but its typhoid mortality still ranks as the highest in the group.

The West South Central cities in 1935 showed a conspicuous improvement, with the lowest group rate (3.82) they have ever attained. These cities had only

TABLE 10.—*Number of Cities with Various Typhoid Death Rates*

	No. of Cities	10.0 and Over	5.0 to 9.9	2.0 to 4.9	1.0 to 1.9	0.1 to 0.9	0.0
1916-1930.....	77	73	2	0	0	0	0
1911-1915.....	70	63	19	2	0	0	0
1916-1920.....	84	52	32	30	0	0	0
1921-1925.....	89	12	17	48	12	0	0
1926-1930.....	92	3	10	30	37	12	0
1931-1935.....	93	0	6	17	29	42	0
1930.....	93	2	6	20	23	22	10
1931.....	93	2	6	23	28	22	12
1932.....	93	1	7	17	29	29	14
1933.....	93	0	7	16	19	33	16
1934.....	93	0	9	11	27	23	2†
1935.....	93	0	7	15	18	29	2†

seventy-four typhoid deaths in 1935 as against 105 and 106 respectively in the two preceding years. With the single exception of El Paso, all the cities had lower rates in 1935 than in 1934. Tulsa continues to have the lowest rate in the group, as it has had every year beginning with 1930, and its 1935 rate (0.7) is definitely lower than the abrupt increase shown in 1934.

Two cities in this group, New Orleans and El Paso, had the highest rates in the country (7.4 and 7.6), as shown in table 9. Less improvement in this group than in the East South Central cities is shown also in the quinquennial average.

The cities in the Mountain and Pacific states (table 8) had a slight increase in typhoid mortality in

Of the thirteen cities in the country with more than 500,000 population, all but Baltimore had 1935 typhoid rates below 1.0. Twenty-four cities had no typhoid deaths at all in 1934, the largest number with a perfect score yet reported. Six of these were New England cities and seven Middle Atlantic. Eleven of the twenty-four cities had had no typhoid deaths in 1934 and two of them (Elizabeth and Grand Rapids) have had no typhoid deaths in four years.

Eight cities (five of them in New England) had no deaths from either typhoid or diphtheria in 1935 (Bridgeport, Cambridge, Erie, New Bedford, New Haven, Scranton, Springfield, Tacoma). It is the second successive year that New Haven has had a clear record for both diseases, a record equaling that of Elizabeth for 1933 and 1934.

There are twenty-two cities in 1935 with rates of 2.0 or over (table 9, second and third ranks) as against twenty in 1934. The highest typhoid rate reported in any city is for the first time below 8.0. Of the twenty-two cities with 1935 rates of 2.0 and over, five are Northern cities (Camden, Columbus, Evansville, Des Moines, Waterbury).

The total of typhoid deaths for the ninety-three cities is notably less in 1935 than in 1934 (385 as against 470). For the seventy-eight cities for which we have complete data since 1910 (table 11) the 1935 total of typhoid deaths is 348, as compared with 413 for the preceding year and the typhoid rate 0.98 as against 1.17.

In six of the eight geographic divisions of the country there were fewer typhoid deaths in 1935 than in 1934, slight increases occurring in the South Atlantic and the Mountain and Pacific groups. For the first time five of the eight groups registered rates below 1.0, and all are below 4.0.

TABLE 11.—Total Typhoid Rate for Seventy-Eight Cities, 1910-1934\*

	Population	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	22,573,435	4,637	20.54
1911	23,211,341	3,950	17.02
1912	23,835,399	3,132	13.14
1913	24,457,989	3,285	13.43
1914	25,091,112	2,781	11.08
1915	25,713,346	2,434	9.47
1916	26,257,550	2,191	8.34
1917	26,865,408	2,016	7.50
1918	27,086,696†	1,824†	6.73
19 9	27,735,083†	1,151†	4.15
1920	28,244,878	1,088	3.85
1921	28,859,062	1,141	3.90
1922	29,473,246	963	3.26
1923	30,087,430	950	3.16
1924	30,701,614	943	3.07
1925	31,315,598	1,079	3.44
1926	31,929,782	907	2.84
1927	32,543,966	648	1.99
1928	33,158,150	628	1.89
1929	33,772,334	537	1.59
1930	34,386,717	554	1.61
1931	35,137,915	563	1.60
1932	35,691,815	442	1.24
1933	35,691,815	423	1.18
1934	35,401,715	413	1.17
1935	35,401,715	348	0.98‡

\* The following fifteen cities are omitted from this table because data for the full period are not available: Canton, Chattanooga, Dallas, Fort Wayne, Jacksonville, Knoxville, Long Beach, Miami, Oklahoma City, South Bend, Tampa, Tulsa, Utica, Wichita, Wilmington

† Data for Fort Worth lacking

‡ The rate for the ninety-three cities in 1935 is 1.03 (total population 37,437,812, typhoid deaths 385), whereas in 1930 it was 1.64, and in 1933 and 1934 it was 1.24 and 1.25, respectively. The 1931-1935 average for the ninety-three cities is 1.31

1935 as compared with 1934 (thirty-five deaths as against thirty) and for the first time since 1929 the decline in the group rate was halted. In 1935 three cities in this group record no typhoid deaths as against two in 1934. For Tacoma it is the second successive year of freedom from typhoid mortality and the third in its history. Long Beach had no typhoid deaths in

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This apparatus is recommended by the firm for the administration of suction-pressure therapy, particularly in the treatment of peripheral vascular diseases

The motor for this unit is enclosed in a rectangular case, about 3 feet high, mounted on casters. A supporting carriage is available. On one side is the control panel for regulating the positive and negative pressures and the frequency of rate of adjustment. At one end is the rubber tube leading to the boot and the plug for the electric cord

The "boot" is of heavy "Pyrex" glass and is fitted with a manometer for measuring both positive and negative pressure and a tube to connect with the motor. Three sizes of rubber cuffs are supplied, which establish a relatively air-tight joint between the patient and the boot. The cuff is joined to the boot by a metal connection about 6 inches long, and the mechanism by which the cuff and the boot are connected is simple and apparently satisfactory.

This apparatus was investigated in a clinic acceptable to the Council. The investigator reported that the mechanical performance of the unit was satisfactory, that it brings about the alternations of suction and pressure in the boot in the manner claimed, and that it is of therapeutic value in certain cases of vascular disease.

TABLE 12.—Total Typhoid Death Rate per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions

	(1933) Population	Typhoid Deaths		Typhoid Death Rates						
		1935	1934	1935	1934	1933	1935	1936	1925	
New England	2,624,805	13	14	0.49	0.53	0.65	0.70	1.31	2.48	
Middle Atlantic	12,952,200	72	82	0.55	0.63	0.78	0.80	1.40	2.97	
South Atlantic	2,267,207	61	50	2.58	2.11	2.31	2.70	4.50	7.01*	
East North Central	9,643,100	58	88	0.60	0.91	0.55	0.75	1.29†	2.22†	
East South Central	1,242,600	49	61	3.94	4.91	4.81	8.31	13.00		
West North Central	2,704,500	23	40	0.85	1.48	1.51	1.24	1.83	3.43	
West South Central	1,934,800	74	105	3.92	5.43	5.40	5.36	7.32‡	13.08‡	
Mountain and Pacific	3,965,400	35	20	0.88	0.75	0.82	0.88	1.80	2.33	

\* Lack data for Jacksonville and Miami

† Data for South Bend for 1925-1929 are not available.

‡ Lack data for Oklahoma City in 1926

§ Lack data for Oklahoma City.

1935 or in 1931 or 1932. San Diego, which has a clear record in 1935, had no typhoid deaths also in 1930. Denver and Spokane have both improved their position in the group and San Francisco, while not equaling its remarkable record of 0.1 for 1933 and 1934, still makes an excellent showing (0.8), two of its five typhoid deaths being reported as in nonresidents.

Some indications for the use of this type of apparatus appear to be acute vascular occlusion, freezing, and vascular diseases with major involvement of the large vessels. Contraindications appear to be thrombophlebitis, cellulitis or lymphangitis (acute or subacute); extensive destruction of the arteriolar or capillary vessels, advanced thrombo-angiitis obliterans with capillary stasis, and advanced arteriolar sclerosis with capillary stasis, and venous thrombosis.



Pavaex Unit.

This apparatus has a very limited field of usefulness and probably therefore does not belong in the armamentarium of the average physician. It belongs more in the realm of hospital equipment, since most of these rare arterial diseases are hospital cases.

In view of the satisfactory performance of this unit with reference to the treatment of acute vascular occlusion, freezing and vascular diseases with major involvement of the large vessels, the Council on Physical Therapy voted to include the Pavaex Unit (Passive Vascular Exerciser) in its list of accepted devices.

#### McKESSON OXYGEN TENT ACCEPTABLE

Manufacturer: McKesson Appliance Company, Toledo, Ohio.

The manufacturer recommends this oxygen tent for use in the treatment of pneumonia, cardiac disease, asphyxia, following brain and chest injuries from restricted breathing, and asphyxia neonatorum.

The tent proper has a capacity of 15 cubic feet and is equipped with four large noninflammable windows. The tent will fold for transportation and storage. It is adjustable in height and can be transported in an automobile. The ice chamber has a capacity of 50 pounds and the sides have one-inch insulation. The dimensions are 14½ by 20¾ by 30½ inches.

The blower is driven by a 110 volt universal variable speed motor, which is controlled by a rheostat. The capacity of the blower is 100 cubic feet free air per minute. The unit is equipped with an oxygen meter and oxygen regulator, together with a safety light which gives a warning that the oxygen is about exhausted. The entire unit is finished in green lacquer trimmed with chromium metal plated parts. The shipping weight is about 205 pounds. The unit is not equipped with a gas tank.

The unit seems to be well constructed and convenient to operate. The fabric is lightweight material, which allows some light to pass through to the patient. The double slide fastener opening permits easy access to care for the patient. The temperature is readily controlled and the humidity may be kept below the levels required. The soda lime is in a built-in container, and the carbon dioxide may be kept below 2 per cent with a moderate amount of soda lime changed once daily. The oxygen control of 55 to 60 per cent readily maintained depends on the amount of necessary handling of the patient. In the use of any type of oxygen tent the Council strongly urges the use of the gas analysis instrument for determining oxygen and carbon dioxide.

In a clinic acceptable to the Council, the unit was tested. The investigation substantiated the physical and therapeutic claims made by the manufacturer.

In view of the satisfactory performance of the unit, the Council on Physical Therapy voted to include the McKesson Oxygen Tent in its list of accepted apparatus.



McKesson Oxygen Tent.

## Committee on Foods

### ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION. FRANKLIN C. BING, Secretary.

ANCHOR BRAND OLEOMARGARINE  
GOLDEN CREST BRAND OLEOMARGARINE  
MAYFLOWER BRAND OLEOMARGARINE  
OHIO MAID BRAND OLEOMARGARINE  
SUNLIGHT BRAND OLEOMARGARINE  
WISCONSIN MAID BRAND OLEOMARGARINE

(CONTAIN 0.1 PER CENT OF SODIUM BENZOATE)

Manufacturer.—The Cudahy Packing Company, Chicago.

Description.—Margarine prepared from hydrogenated, refined oleo oil and cottonseed oil, pasteurized cultured skim milk and salt. Contains 0.1 per cent of sodium benzoate.

Manufacture.—The mixture of hydrogenated fats is heated to 49 C. and churned with pasteurized, cultured skim milk and salt. The resulting emulsion is solidified by chilling, again churned with additional salt, refrigerated, molded into prints and automatically wrapped and packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture .....	13.6
Total solids .....	86.4
Ash .....	3.5
Sodium chloride .....	3.5
Fat (ether extract) .....	81.9
Protein (N × 6.25) .....	0.3
Carbohydrates other than crude fiber (by difference) ..	0.7

Calories.—7.4 per gram; 210 per ounce.

#### CELLU BRAND RHUBARB, WATER PACKED

Distributor.—Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Geneva Preserving Company, Geneva, N. Y.

Description.—Canned rhubarb, packed in water.

Manufacture.—Selected rhubarb is harvested at the proper degree of maturity, trimmed, automatically cut into pieces, washed and filled into cans, which are filled with hot water, sealed and processed.

Analysis (submitted by distributor).—

	per cent
Moisture .....	94.8
Total solids .....	5.2
Ash .....	0.7
Fat (ether extract) .....	0.7
Protein (N × 6.25) .....	0.5
Crude fiber .....	1.0
Starch (diastase method) .....	1.9
Carbohydrates other than crude fiber (by difference) ..	2.3

Calories.—0.2 per gram; 6 per ounce.

Claims of Manufacturer.—Choice quality rhubarb packed without added sugar or salt. For use in special diets in which sugar or salt is proscribed or in quantitative diets of calculated composition.

#### STANDBY BRAND EVAPORATED MILK

Distributor.—Gamble-Robinson Company, Minneapolis.

Packers.—Manufacturers of accepted brands of evaporated milk.

Description.—Canned, sterilized, unsweetened, evaporated milk; the same as Van Camp's Evaporated Milk (THE JOURNAL, June 8, 1935, p. 2097).

#### LUSH'US BRAND EVAPORATED MILK

Distributor.—General Grocers Co-op. Corp., Chicago.

Packer.—Amboy Milk Products Co., Amboy, Ill.

Description.—Sterilized, unsweetened evaporated milk. The same as Amboy Brand Evaporated Milk (THE JOURNAL, May 7, 1932, p. 1655).

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 6, 1936

## THE LEUKOPENIC INDEX AND FOOD ALLERGY

The search for methods of identifying food allergy more accurate than the methods now in use, namely, tests of cutaneous sensitization, food diaries and exclusion diets, has led recently to the clinical study of the so-called leukopenic index described by Vaughan<sup>1</sup> in 1934. Allergic hypersensitivity to a food is considered to exist, according to this test, if ingestion of the food is followed by a significant fall in the total leukocyte count. A rise in the leukocyte count following ingestion of a food is said to indicate lack of allergic reaction to a food or normal "digestive leukocytosis." Although at first Vaughan<sup>2</sup> considered a fluctuation of 2,000 in the number of leukocytes per cubic millimeter of blood as within the limits of normal, subsequently he regarded a drop of more than 1,000 leukocytes as positive evidence of allergic response. Gay<sup>3</sup> has considered that if the number of leukocytes falls 200, 400, 600, 800 or more below the fasting average the drop is significant and that the foods which cause the drop are "incompatible." In his hands "the leukopenic index has proved to be an aid of unexpected reliability and accuracy, not only in determining the allergic state but in determining the actual allergens at fault."

Whether or not the ingestion of a certain food by a person sensitive to that food is followed by a drop in the total leukocyte count, careful routine laboratory methods of counting leukocytes show that normal fluctuations in the total leukocyte counts of normal persons in a fasting state are much greater than the fluctuations on which this test has been based. Thus Mauriac and Cabouat<sup>4</sup> demonstrated definite variations in the total leukocyte counts of normal persons when the counts were made at intervals of an hour. They also found

fluctuations of as much as 3,000 leukocytes in fifteen minutes and predicted that if it were possible to examine the blood every minute the frequency and suddenness of the oscillations of the leukocyte count would be even more evident. Within a half hour they noted a change in leukocyte count from 12,300 to 6,500 per cubic millimeter of blood. Sabin, Cunningham, Doan and Kindwall<sup>5</sup> clearly demonstrated marked fluctuations in the total leukocyte count in the fasting, resting state when counts were made at intervals of fifteen minutes. Shaw<sup>6</sup> stated that the minimal variation between two counts made fifteen minutes apart, with the patient in the resting, fasting state, ranged from 32 per cent to 10 per cent, while the maximal variation ranged from 51 per cent to 19 per cent. Medlar<sup>7</sup> showed that the total leukocyte count of a normal person under carefully standardized conditions may vary 50 per cent in less than half an hour. When the total leukocyte count was taken at intervals of three minutes over a period of an hour, it varied from 4,300 to 7,600 per cubic millimeter of blood. When two other subjects were studied at intervals of five minutes for periods of one hour and of two hours, the total leukocyte count varied from 5,800 to 9,400 and from 5,300 to 8,300, respectively.

Ponder, Saslow and Schweizer<sup>8</sup> explained some of the fluctuations noted in the foregoing on the basis of the error inherent in the technic, believing that the chief source of error was imperfect distribution of cells in the counting chamber. They felt that had larger numbers of cells (approximately 800 cells, in both sides of two counting chambers) been counted in the experiments reported by Sabin, Cunningham, Doan and Kindwall, the fluctuations found would have been less striking. Although Jones, Stephens, Todd and Lawrence<sup>9</sup> felt that the variations in the total leukocyte count were small, they demonstrated fluctuations of 1,000 to 2,000 cells in counts made at successive intervals of fifteen minutes and a variation of as much as 3,100 in seventy-five minutes.

Simpson<sup>10</sup> concluded, "leukocyte counts of healthy people vary continually and show that definite changes may occur in them, not only in a quarter of an hour, but even in a minute." Washburn<sup>11</sup> has demonstrated hourly fluctuations in the total leukocyte count of normal infants at ages of from one day to twenty-four weeks.

1. Vaughan, W. T.: Food Allergens: III. The Leukopenic Index; Preliminary Report, *J. Allergy* 5: 601 (Sept.) 1934.

2. Vaughan, W. T.: Further Studies on the Leukopenic Index in Food Allergy, *J. Allergy* 6: 78 (Nov.) 1934.

3. Gay, L. P.: Gastro-Intestinal Allergy: IV. The Leukopenic Index as a Method of Specific Diagnosis of Allergens Causing Peptic Ulcer, *J. A. M. A.* 106: 969 (March 21) 1936.

4. Mauriac, P., and Cabouat, P.: Contribution à l'étude des variations de la formule leucocytaire chez l'homme normal, *Paris méd.* 39: 407 (May 21) 1921.

5. Sabin, Florence R.; Cunningham, R. S.; Doan, C. A., and Kindwall, J. A.: The Normal Rhythm of the White Blood Cells, *Bull. Johns Hopkins Hosp.* 37: 14 (July) 1925.

6. Shaw, A. F. B.: The Diurnal Tides of the Leukocytes of Man, *J. Path. & Bact.* 30: 1 (Jan.) 1927.

7. Medlar, E. M.: The Extent of the Variations in the Leukocytes of Normal Individuals, *Am. J. M. Sc.* 117: 72 (Jan.) 1929.

8. Ponder, Eric; Saslow, George, and Schweizer, Malvina: On Variations in the White Cell Count of Man, *Quart. J. Exper. Physiol.* 21: 21 (April) 1931.

9. Jones, Edgar; Stephens, D. J.; Todd, Harriett, and Lawrence, J. S.: Studies in the Normal Human White Blood Cell Picture: I. Variations in Recumbent Basal Subjects and in Individuals with Change of Posture, *Am. J. Physiol.* 105: 547 (Sept.) 1933.

10. Simpson, R. H.: Physiological Leukocyte Counts and the Detection of Small Deviations from the Normal, *Brit. J. Radiol.* 6: 705 (Dec.) 1933.

11. Washburn, A. H.: Blood Cells in Healthy Young Infants: III. A Study of 608 Differential Leukocyte Counts, with a Final Report of 908 Total Leukocyte Counts, *Am. J. Dis. Child.* 50: 413 (Aug.) 1935.

Total leukocyte counts made in an exacting manner on the blood of normal persons seem therefore to be subject to considerable fluctuation. The admonitions of Mauriac and Cabouat in 1921 and of Simpson in 1933 to the effect that it is necessary to be cautious in attributing these fluctuations to any specific cause are still timely. Final decision on the value of the leukopenic index in diagnosis of food allergy might be hastened, therefore, if contributors on the subject would give detailed information as to the exact technic used, together with protocols of observations and counts sufficient for statistical analysis.

#### DR. JOHN GORRIE OF APALACHICOLA

One hundred years ago the major medical problems in Apalachicola, Florida, were malaria and yellow fever. Although the city was already one of the large cotton markets on the Gulf Coast, further development was retarded by the prevalence of these and other serious febrile diseases. Then John Gorrie,<sup>1</sup> a graduate of the College of Physicians and Surgeons in New York, came to Apalachicola in 1833 to practice medicine. After some years of clinical observation, he wrote a series of articles for the *Lancet* on "The Equilibrium of Temperature as a Cure of Pulmonary Consumption," and for the local paper on the prevention of malarial diseases. The *New Orleans Medical and Surgical Journal* summarized his work on the subject of fevers in 1855. Imbued with the idea that control of the fever itself was essential in the treatment of these diseases, Gorrie carried out many experiments to devise a method for the manufacture of ice, which was scarce in Apalachicola and which, when brought south from New England, sometimes cost a dollar a pound. Eventually he succeeded. The original model of his ice machine, now in the Smithsonian Institution in Washington, comprised essentially a pump with which to compress air in a chamber in which was a container filled with water. After being compressed, the air was permitted to expand rapidly, thereby absorbing heat from the water and so producing artificial ice. Gorrie's ideas were at first ridiculed, and he was unable to obtain financial backing to develop his machine. However, thirty years after he died, there was built in Apalachicola one of the first commercial ice factories in the world. Dr. John Gorrie is recognized today as the father of the artificial ice industry.

While his ideas on the prevention of fevers were not entirely in accord with more recent discoveries, Gorrie advocated the draining and filling of swamps to prevent fevers in the interest of public health. He had observed that persons who slept under nets rarely contracted the fever. Apparently he did not suspect that the effectiveness of the net was due to the simple fact that it kept mosquitoes from biting the person within. To apply

the idea of controlling fever in the treatment of disease, he developed a unique method of ventilating the room by means of an opening in the wall at the floor level instead of using windows and doors. He would suspend from the ceiling of the sickroom a receptacle in which was placed a block of ice, and above it a hood with a pipe passing through the ceiling into the chimney. The ice at the ceiling cooled the air, which, being heavier, descended and passed out of the room through the opening at the floor. This arrangement produced a circulation of cooled air, which passed over the patient. With this method of ventilation in actual service, Gorrie became the father of modern air conditioning as a method for the treatment and prevention of certain diseases.

Dr. Gorrie spent his entire personal fortune in attempting to develop his methods and died without realizing that he would some day be regarded as a great benefactor of mankind. He was also a public servant in other capacities, having been chairman of the council, treasurer, postmaster and mayor of Apalachicola. The state of Florida long since recognized his greatness when it placed his statue in the Hall of Fame in the Capitol in Washington. John Gorrie belongs also in that medical hall of fame which includes such other general practitioners of medicine as Koch, Jenner, McDowell, Sims and Long.

#### HEREDITARY FACTOR IN OBESITY

Of the factors believed to be significant in producing obesity, heredity has received much attention. It is easy to impress on the mind of the layman the belief that normally he has little control over his body weight and that his hereditary tendencies are of prime importance in governing the build which he attains. One often hears of the tendency to remain thin or of the tendency to gain weight. It is also common to hear of the inability either to gain or to lose weight by increasing or decreasing the food intake. This belief that appetite and energy intake were secondary in importance to the hereditary or "tendency" factor in weight regulation early received considerable support from the investigations of Grafe and his associates.<sup>1</sup> These investigators believed that the fasting, resting metabolism is significantly affected by the caloric value of the food previously ingested. According to this hypothesis, normal animals, including man, maintain a constant weight, almost without regard to the energy intake, by alteration of the metabolism in accordance with the caloric value of the food. Obesity becomes, therefore, nothing more than the failure of this alleged metabolism-regulating mechanism to respond normally to the stimulus of food. Furthermore, leanness may then be attributed to an over-response to a normal stimulus. The magnitude of these responses appeared to be related to a "tendency" factor.

1. Taylor, H. M.: John Gorrie: Physician, Scientist, Inventor. *South. M. J.* 28: 1075 (Dec.) 1935.

1. Grafe, E., and Graham, D.: *Ztschr. f. physiol. Chem.* 73: 1, 1911.

Wiley and Newburgh<sup>2</sup> have clearly demonstrated that the hypothesis of Grafe is based on a fallacious analysis of experimental data. In the normal person the body weight is affected by the individual metabolic requirement and by the total intake of energy. When the food ingested provides an amount of energy less than the metabolic requirement, there will be an initial loss of weight and an adjustment of the rate of metabolism to a lower level. If the undernutrition is not too extreme, weight may be maintained after the initial loss. This appears to be an adaptation enabling the organism to prolong life despite the restricted food supply. The ingestion of a quantity of food in which the energy content exceeds the individual metabolic requirements will result in an increase in weight. Although a number of factors may influence the individual metabolic requirements, it seems apparent that the appetite mechanism functions to maintain a balance between the supply of energy and the metabolic demands.

Notwithstanding the experimental demonstration that the relationship existing between the caloric intake and metabolic requirement is of fundamental importance in regulating body weight, it seems likely that heredity indirectly plays more than a coincidental part. The emphasis which should be attributed to this factor, however, remains to be clearly established. Studies of the type reported by Gurney<sup>3</sup> from the University of Buffalo will aid in a statistical analysis of the importance of the hereditary factor in obesity. Seventy-five stout women were studied in the outpatient department of the Buffalo General Hospital with particular reference to three points: (1) the factors associated with the onset of obesity as compared with the same factors occurring in a not stout control group, (2) the incidence of obesity in the parents of the stout group as opposed to that in the parents of the not stout control group, and (3) the body build of the progeny of different matings with special reference to mendelian inheritance of build. Of sixty-three stout women who gave a reliable history of the onset of obesity, pregnancy or a major operative procedure appeared to be the most common factor associated with the initiation of the obese condition. However, in the control group of fifty-five women who were of approximately the same age group and who had approximately the same incidence of pregnancies and operation, obesity did not develop. Further study demonstrated that the incidence of obesity in the parents of the stout group was markedly greater than in the parents of the group of women who were not stout. A study of the progeny of different parents indicated a segregation which was taken as evidence for mendelian inheritance of build. Data of this type would seem to indicate that certain inconsistencies of build in persons subjected to the

same environmental influence may be related to the hereditary factor. In its relation to the more important energy factors already discussed, the observations of Gurney may be interpreted as suggesting that the energy requirement of persons subjected to the same conditions may be modified by a hereditary influence of build. This is to be expected in view of the relationship existing between the surface area of a person and the fasting, resting metabolism.

## Current Comment

### ESTROGENIC HORMONES AND SARCOMA IN MALE MICE

The interesting interrelationships among the estrogenic substances, the carcinogenic chemical compounds and the sterols, and the rôle of estrogenic substances in tumor formation, have been discussed in these columns.<sup>1</sup> Numerous studies have demonstrated unsuspected ramifications of these relationships; an additional aspect of this suggestive story has been revealed in a report from the Yale University School of Medicine.<sup>2</sup> It has been possible to produce sarcoma experimentally at the site of injection of estrogenic substances in five male mice from two different litters of a high tumor rate strain. Each animal was given by subcutaneous injection 10 rat units of theelin daily from sixty-eight to 102 days, followed by weekly injections of 500 international units of keto-estrin benzoate for periods of from twelve to twenty-five weeks. These sarcomas grew rapidly in the original mice and also following implantation into other mice of the same strain. Grafts made in one unrelated strain have failed to grow, although there was growth of grafts in some of the mice of each of two other distantly related strains and of another unrelated strain. Histologic examination of the primary tumors and grafts showed that these were spindle cell sarcomas in a state of active growth. Large multinucleated cells were obtained occasionally. Delicate capillaries were plentiful, and edematous areas occurred in the primary tumors with an associated leukocytic infiltration. There were some areas of necrosis in both the primary tumors and the grafts. The neoplastic tissues showed invasion of the surrounding normal tissues, but no metastases were observed. Although the specific response of the mammary epithelium to estrogenic hormone is now generally recognized, this newly observed development of sarcoma in subcutaneous tissue under the described experimental conditions is striking and suggestive. It seems possible that estrogenic hormone, under as yet ill defined conditions, may have a stimulating effect on mesodermal cells as well as on epithelium, the result being of sufficient extent to cause neoplasms in a manner already observed to be characteristic of the so-called carcinogenic substances.

2. Wiley, F. H., and Newburgh, L. H.: J. Clin. Investigation 10: 723 (Oct.) 1931.

3. Gurney, Ramondell: The Hereditary Factor in Obesity, Arch. Int. Med. 57: 557 (March) 1936.

1. Relationship Among the Sterols, Estrogenic Substances and Carcinogenic Compounds, editorial, J. A. M. A. 104: 51 (Jan. 5) 1935. The Rôle of Estrogenic Substance in Tumor Formation, *ibid.* 106: 1093 (March 28) 1936.

2. Gardner, W. U.; Smith, G. M.; Strong, L. C., and Allen, Edgar. Development of Sarcoma in Male Mice Receiving Estrogenic Hormone, Arch. Path. 21: 504 (April) 1936.



## Medical Economics

### FREEDOM OF CHOICE OF PHYSICIAN IN INDUSTRIAL MEDICINE

M. S. BLOOM, M.D.,  
BINGHAMTON, N. Y.

For nearly four years a plan of industrial medicine which provides complete freedom of choice of physicians has worked out successfully in Binghamton, N. Y. This plan, referred to widely as the "Spaulding plan," originated with Spaulding Bakeries, Inc., manufacturers of bakery products. It represents an industrial prepayment medical plan offering complete freedom of choice of physicians. Some facts concerning the plan, the philosophy back of its inception, and the procedure by which its principles are achieved, have been the subjects of previous articles published in *THE JOURNAL*.<sup>1</sup>

Since the publication of my last article, experience with the new plan in the business organizations now sponsoring it has been one of continued progress. There has been an increased accumulation of reserve funds, indicating the financial soundness of the basic principles on which it is organized. What is perhaps more important still, there has been no sign of let-down in the splendid spirit of cooperation and enthusiasm on the part alike of physicians, employees and employers. With almost four years of experience in this pioneer project, I am more convinced than ever that the plan is not only practicable, workable and highly desirable but necessarily the mean between the extremes of complete and uncompromising *laissez faire* and an equally complete and uncompromising state medicine.

Dr. Willard J. Denno, general medical director of the Standard Oil Company of New Jersey, writes:

"As you probably know, we have been interested for a long time in the problem of obtaining for the low-salaried groups of this company a moderate priced medical service which would at the same time be of high quality.

"In 1923, we assisted our employees at Baton Rouge in starting a mutual benefit association which has proved extremely successful from the standpoint of the group involved. It has the disadvantage, however, of not permitting free choice of physicians, as this association employed only full-time doctors (surgeons, internists, specialists, etc.) and thus antagonized the local medical profession. I soon came to realize that, if anything constructive was to be accomplished that would be generally acceptable to the medical profession and at the same time provide high grade service for the lower salaried groups, it would be necessary to encourage the free choice of physicians as one of the basic tenets of the plan. The organization that you have evolved meets these requirements and meets them better than any other plan that I have studied. It was for this reason that I arranged for my associate Dr. Schoenleber to visit you and discuss the details of your organization, with the result that we determined to adopt the general principles of your plan. Our company is now offering to its employees the opportunity to organize a mutual benefit association (based on the principles of the Spaulding plan) and the full cooperation of our medical department is at the service of any such groups as may wish to avail themselves of our advice."

Another official of the same company writes that some such project as freedom of choice might "point the direction in which this type of security program should go rather than the state medicine route European countries are following."

The Commission of Medical Economics of Kings County, N. Y., approves the Spaulding plan, and Dr. Lewis A. Koch, chairman of the committee, in a letter makes the following interesting comments: "Our county society is actively engaged in an effort to bring about the transformation of the unacceptable plans now in force in two companies in New York.

We are urging them to revise their plans to conform to the general outline that you have accomplished in Binghamton. I feel that the five counties of greater New York will demand that some plan similar to the Spaulding plan or the Workmen's Compensation Law must be made."

The head of a large chain store corporation writes that he thinks the plan is a "wonderful thing for any organization." The medical director of a large insurance company says: "This plan comes as near reaching the ideal of industrial medicine as any plan that I have heard of. It appears to meet the medical and surgical needs of the group and yet stays away from the various extremely objectionable paternalistic plans advocated and practiced by some large industrial groups."

My point is not to present a pleasing array of testimonials for this type of medical service but simply to take from my miscellaneous correspondence some views that have been spontaneously expressed with no thought of publication. The samples selected are representative, and more or less random, although by no means exhaustive.

Dr. J. L. Kinner, past president of the Chemung County Medical Society, Elmira, N. Y., where one of the divisions of the Spaulding Mutual Benefit Association operates, tells me that he has "taken pains to inquire from other doctors and from employees as to their opinions of the Spaulding plan, and," he continues, "in no single instance have I found an expression of dissatisfaction. I am personally of the opinion that a general application of this plan to industry will do much to solve many of the problems that exist in the care of the sick."

Dr. Charles S. Stevens, adviser of the Elmira Division of Spaulding's, states his experience as follows: "At various times throughout the past two years, I have deliberately talked about the plan with various Elmira physicians and not once have I heard a single complaint against the plan or the way in which it is being operated. Every single individual is more than satisfied with it, and very frequently I have heard the statement from physicians and surgeons that they wished other industrial corporations would adopt a similar proposition."

It may be assumed without elaboration that the employing sponsors approve the plan as advantageous to their organizations. There is a real financial cost involved, of course, but the employers feel that, if they can help to free the minds of their workers from the bothersome thoughts of doctor bills and hospital costs during illness, this cost is productive. There is something more than the economic consideration in the background, for in every instance the organizations sponsoring the plan feel that they are providing a definite service, something ordinarily out of the reach of the rank and file of the average industrial employee. Call it what you will, the fact remains that the employer is doing a genuine service for the individuals on his payroll, for the community and for society.

As indicated, the original venture in freedom of choice was with the Spaulding Bakeries, Inc., at their Binghamton plant. From that plant the services were extended to plants in Elmira, Oneonta and Wilkes-Barre. A division is now in the process of organization at Middletown, N. Y., in the Spaulding plant there. The principles and practices of the plan have also been extended to two other firms in Binghamton—the Agfa Ansco Corporation, manufacturers of cameras and photographic supplies, and Truitt Brothers, shoe manufacturers. In both organizations the plan is working out with splendid success.

Perhaps the feeling in general of the employee toward the plan can best be indicated by quoting from a letter which I received not long ago. It is typical of the reaction I am constantly receiving from workers with whom I come in contact:

"While I was recovering from my recent operation I have had a great deal of time to think about the benefits I have obtained from our mutual benefit association. It would have been practically impossible for me to have had any operation unless I went as a charity patient.

1. Bloom, M. S.: A New Experiment in Industrial Medicine, *J. A. M. A.* 106: 1869 (June 10) 1933; Successful Industrial Group Practice, *ibid.* 103: 1155 (Oct. 13) 1934.

"Two years ago I had an operation and we would be still paying for it if it were not for the mutual benefit association. In the two and a half years that I have been in the association I have paid in about \$30. I have had benefits which would have totaled nearly \$700 or \$800 if I had been forced to pay for them. It would have meant one of two things—first, an enormous bill which would have taken an indefinite time to pay and also have been a burden that we could not have carried with our present earnings, and, second, my going to the hospital as a charity case, which would have meant embarrassment for both my husband and myself.

"For these reasons I cannot see how any one employed where they have a benefit association can afford to be without the protection which the association gives."

Group medicine, without doubt, is more extensively practiced in the Binghamton area than in any other area in this country. There are, according to the local chamber of commerce, 25,926 industrial workers in the district. All but 5,000 of these participate in some form of industrial medicine—represented by contract, freedom of choice, or something in between. There are probably at least 10,000 more persons gainfully employed. So that out of a community of approximately 35,000 employed persons more than half of them are protected by industrial medicine. This fact takes on significance, I believe, as I get to the next point.

The Binghamton City Hospital is one of the hospitals which is used by the members of these medical service plans. Nearly one half of the employed persons work for one large shoe company, which hospitalizes its cases at another institution. The current report of the Binghamton City Hospital indicates that the number of free cases has increased from 35 per cent of all cases in 1927 to 56 per cent in 1935. In 1930 the free operation represented 25 per cent of all cases, and in 1935 48 per cent. The point is, then, that in a community which certainly has done a tremendous amount of work to relieve the problem of medical care still only 44 per cent of the cases entering the leading hospital are paid cases. This in spite of the fact that the area has probably suffered much less from the depression than most industrial areas in this country.

The Broome County Medical Society, in whose jurisdiction the Spaulding plan operates, has gone into the question of prepayment medical insurance by recently adopting a resolution favoring the prepayment plan of medical care. This decision was reached largely on the basis of the successful and satisfactory operation of the Spaulding plan. Here again there will doubtless be still a further vehicle of experimentation in freedom of choice in group medicine as soon as a plan can be worked out in detail. If the medical society can work out a suitable plan, using the experience directly at hand, for the community at large or some segment of it, it would seem that the profession is proceeding in the direction of at least a partially intelligent solution of the dilemma of medical care.

The principles on which modern medicine is founded were given a very satisfactory day in court last summer in the state of New York. The new Workmen's Compensation Law for that state calls for complete freedom of choice on the part of the employee. Group practice of whatever type or kind must begin with freedom of choice if the patient is to be given all that modern medical science is capable of giving, and if the personal doctor-patient relationship is to be retained.

And so it is that progress is being made definitely, along progressive lines, and in the interest of the doctor, the patient and the community.

Getting back to the specific plan, it should be of considerable interest to classify the expenditures made by business organizations operating under the Spaulding plan. We present the classification of expenditures in percentages. These are for physicians, sick relief, hospitalization and dentists. (Dental features are provided by only one of the Spaulding divisions and include only x-ray examinations and extractions.)

These percentages, given in the accompanying table, provide a dependable guide in estimating what the relative expenditures might be under a similar plan, and will help others who have a part in running any organization for medical service.

When a mutual benefit group of this nature is organized the medical profession in the given community is taken into full confidence and given the privilege of accepting or rejecting any or all provisions. The question of arriving at satisfactory fees has never been a difficult one and has always been adjusted to the satisfaction of the community physicians. The local societies have accepted the fee basis of \$100 for major operations. Fees for minor operations follow the general fee tables of the community. Prevailing fees for house and office calls are respected. Specialists whose fees are above the prevailing rates are paid the regular, or general fee by the group, and the difference, if there is one, is borne by the patient.

There is no limit whatever to the amount of money that may be paid to any one physician. Limits would not be practicable under this plan, for absolute freedom of choice is maintained at all times. The amount of work the physician gets depends on his reputation as a doctor, just as it does in regular practice. Our records show, however, interestingly enough, that the work is widely distributed, probably on the natural and normal basis of the general community practice.

Percentages of Expenditures Under the Plan

Firm	Dates	Phys- cians	Sick Relief	Hospi- tals	Den- tists
Spaulding's Binghamton.....	4/1/32- 4/1/33	73.2	10.7	8.2	7.9
	4/1/33- 4/1/34	66.2	12.3	13.8	7.7
	4/1/34- 4/1/35	71.0	11.0	8.2	9.6
Three year average.....		70.1	11.2	10.1	8.4
Elmira.....	1/1/34- 1/1/35	67.7	8.8	23.5	
	1/1/35- 1/1/36	82.0	4.6	13.4	
Two year average.....		74.8	6.7	18.4	
Oneonta.....	11/1/34-11/1/35	73.0	5.2	21.8	
Wilkes-Barre.....	1/1/35- 1/1/36	67.5	3.3	29.2	
Agfa Anseo Corporation.....	4/1/33- 4/1/35	63.8	20.5	15.7	
	4/1/34- 4/1/36	75.8	11.5	12.7	
Two year average.....		69.8	16.0	14.2	
Truitt Brothers.....	5/1/34- 5/1/35	68.1	24.8	7.1	

Although there are no limits to expenditures to any one physician, there are definite, though very liberal, limits set for expenditures for members. For instance, a limit of \$50 is placed for office and house calls for any one member. Hospital costs per member are limited to \$3 per day for any thirty days in a given year. Not more than \$350 total may be expended for any one member during a year. The last limit is set by the state law for organizations not incorporated.

Expenditures for eyeglasses, crutches, splints and the like are paid for by the patient, although the benefit association provides for refractions, consultations, x-ray examinations and laboratory services. The fact that all the limits are liberal is borne out by the condition that very seldom indeed does any one reach the prescribed maximum limits.

The plan is financially sound. A splendid reserve is continuously accumulating to provide against unpredictable epidemics of disease. When it is felt that the reserve is sufficiently large to take care of any risks likely to arise, additional services for members will be incorporated in the plan.

Whatever changes come should fit into the needs and philosophy of the physician, and whatever plans are developed should be in his hands. The physician has complete freedom under the Spaulding plan, the feasibility of which has been proved over a period of four years, and in an adequate number of diversified industries. This plan seems to be an intelligent approach to the needs of employed groups, and, with certain limitations, it should be possible for county medical societies in general to sponsor such a plan for entire communities.

110 Oak Street.

# PROCEEDINGS OF THE KANSAS CITY SESSION

## MINUTES OF THE EIGHTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT KANSAS CITY, MAY 11-15, 1936

(Concluded from page 1924, volume 106)

### MINUTES OF THE SECTIONS

#### SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. William J. Kerr, San Francisco.

Dr. Walter L. Bierring, Des Moines, Iowa, in outlining the organization of the American Board of Internal Medicine, commented as follows: That in accordance with a resolution adopted in 1935, the chairman of the Section on Practice of Medicine appointed a committee consisting of Drs. Reginald Fitz of Boston, Ernest E. Irons of Chicago, John H. Musser of New Orleans and Walter L. Bierring, chairman, to act in conjunction with a committee from the American College of Physicians in the authorization of a certifying board for internists in the organization. This committee met in conjunction with the committee from the American College of Physicians, consisting of Dr. J. A. Bauer of St. Louis; Dr. J. C. Meakins, representing the Canadian medical group; Dr. W. S. Middleton of Wisconsin; Dr. Pepper of Philadelphia, and Dr. G. G. Richards of Salt Lake City. A definite plan of organization has been developed in the form of articles of incorporation which constitute the constitution and by-laws of the American Board of Internal Medicine, which have been approved by the Executive Committee of the Advisory Board for Specialties, the Council on Medical Education and Hospitals and the General Advisory Board for Medical Specialties. Dr. Bierring also informed the section that the American College of Physicians was underwriting the American Board of Internal Medicine until such time as it becomes self supporting.

It was moved by Dr. Bierring, on behalf of the committee, that the Section on Practice of Medicine approve the organization of the American Board of Internal Medicine, which motion was duly seconded.

Dr. James Alexander Miller, New York, president of the American College of Physicians, made some brief remarks, concerning the American Board of Internal Medicine, following which the motion that the Section on Practice of Medicine approve the organization of this board was put to a vote and carried.

Drs. Wallace M. Yater and Laurence S. Otell, Washington, D. C., presented a paper on "Hepatosplenography by Means of Stabilized Thorium Dioxide Sol." Discussed by Dr. Leo G. Rigler, Minneapolis.

Drs. Edward F. Bland, T. Duckett Jones and Paul D. White, Boston, presented a paper on "The Regression and Disappearance of the Signs of Rheumatic Heart Disease." Discussed by Drs. Fred M. Smith, Iowa City; P. T. Bohan, Kansas City, Mo.; William J. Kerr, San Francisco, and T. Duckett Jones, Boston.

Dr. Walter L. Bierring, Past President of the American Medical Association, introduced the Frank Billings lecturer for this year, Dr. George Blumer, New Haven, Conn., who read a paper on "Pericarditis Epistenocardica."

Drs. A. V. Hardy, Baltimore; C. F. Jordan, Des Moines, Iowa, and I. H. Borts, Iowa City, presented a paper on "Undulant Fever: Further Clinical and Epidemiologic Observations in Iowa." Discussed by Drs. Fred E. Angle, Kansas City, Kan.; Walter L. Bierring, Des Moines, Iowa; William J. Kerr, San Francisco, and A. V. Hardy, Baltimore.

Dr. H. A. Reimann, Minneapolis, read a paper on "Habitual Hyperthermia." Discussed by Drs. A. C. Ernstene, Cleveland, and Russell M. Wilder, Rochester, Minn.

Dr. Alvan L. Barach, New York, read a paper on "Practical Therapeutic Aspects of Helium Therapy." Discussed by Drs. Francis M. Rackemann, Boston; C. K. Maytum, Rochester, Minn.; John D. Kernan, New York; Frank H. Lahey, Boston; William J. Kerr, San Francisco, and Alvan L. Barach, New York.

THURSDAY, MAY 14—MORNING

A joint meeting was held with the Section on Pharmacology and Therapeutics.

Dr. Soma Weiss, Boston, read a paper on "The Clinical Use and Dangers of Hypnotics." Discussed by Drs. Chauncey D. Leake, San Francisco, and Soma Weiss, Boston.

Dr. William J. Kerr, San Francisco, read the chairman's address, entitled "The Common Cold."

Dr. Joseph M. Hayman Jr., Cleveland, read a paper on "The Clinical Use of Diuretics."

Dr. Stafford L. Warren, Rochester, N. Y., read a paper on "Clinical Evaluation of Fever Therapy," which was followed by questions from the floor and answered by Dr. Warren.

Dr. W. M. James, Panama, C. Z., read a paper on "Notes on Treatment of Histolytica Infection in Man."

FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. John H. Musser, New Orleans; vice chairman, Dr. Ralph H. Major, Kansas City, Mo.; secretary, Dr. Joseph T. Warren, Cleveland; executive committee: Dr. George R. Minot, Boston; Dr. William J. Kerr, San Francisco; Dr. John H. Musser, New Orleans; delegate, Dr. J. E. Paullin, Atlanta, Ga.; alternate, Dr. Ernest E. Irons, Chicago.

Drs. Norman Jolliffe and C. N. Colbert, New York, presented a paper on "The Etiology of Polyneuritis in the Alcoholic Addict."

Dr. M. A. Blankenhorn, Cincinnati, read a paper on "Oral Complications of Chronic Alcoholism: Significance, Diagnosis and Treatment."

These two papers were discussed by Drs. H. B. Mulholland, University, Va.; Tom Spies, Cincinnati; Norman Jolliffe, New York, and M. A. Blankenhorn, Cincinnati.

Dr. Stacy R. Mettier, San Francisco, read a paper on "Classification and Treatment of the Hemorrhagic States, with Special Reference to the Value of Roentgen Irradiation of the Spleen and Essential Thrombocytopenic Purpura Hemorrhagica." Discussed by Drs. E. B. Reed, Lincoln, Neb., and Stacy R. Mettier, San Francisco.

Drs. R. A. Woodbury, W. F. Hamilton and H. T. Harper Jr., Augusta, Ga., presented a paper on "Effect of Coughing, Straining, Forced Breathing on Arterial and Intrathoracic Pressure in Man." Discussed by Drs. Ralph H. Major, Kansas City, Mo., and R. A. Woodbury, Augusta, Ga.

Drs. John C. Sharpe and Richard H. Young, Omaha, presented a paper on "Von Recklinghausen's Neurofibromatosis: Unusual Clinical Manifestations in Sixteen Cases." Discussed by Drs. W. M. Ketcham, Kansas City, Mo.; J. J. Eller, New York, and Richard H. Young, Omaha.

Drs. R. H. Freyberg, R. L. Grant and M. A. Robb, Ann Arbor, Mich., presented a paper on "Hypoparathyroidism: The Treatment of Chronic Cases and an Explanation of 'Refractiveness' to Parathyroid Extract." Discussed by Drs. W. M. Ketcham, Kansas City, Mo.; William J. Kerr, San Francisco, and R. H. Freyberg, Ann Arbor, Mich.

SECTION ON SURGERY, GENERAL  
AND ABDOMINAL

WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Howard M. Clute, Boston.

Dr. Herbert L. Johnson, Boston, read a paper on "Peritoneal Immunization." Discussed by Drs. Bernhard Steinberg, Toledo, Ohio; H. M. Trusler, Indianapolis; W. T. Coughlin, St. Louis, and Herbert L. Johnson, Boston.

Dr. Leon Goldman, San Francisco, read a paper on "Gross Hemorrhage in Peptic Ulcer: Its Morbidity, Mortality and Treatment." Discussed by Drs. Samuel L. Ledbetter Jr., Birmingham, Ala.; J. William Hinton, New York, and Leon Goldman, San Francisco.

Drs. Donald Guthrie, Sayre, Pa., and Robert F. Sharer, Oak Park, Ill., presented a paper on "Permanence of Cure Following Ruptured Duodenal Ulcers." Discussed by Drs. Harry Kerr, Washington, D. C.; Edwin G. Ramsdell, White Plains, N. Y.; W. T. Coughlin, St. Louis, and Robert F. Sharer, Oak Park, Ill.

Drs. Alton Ochsner and Ambrose H. Storck, New Orleans, presented a paper on "Treatment of Mechanical Ileus by Intestinal 'stripping': A Clinical and Experimental Study." Discussed by Drs. Willis D. Gatch, Indianapolis; Owen H. Wangenstein, Minneapolis, and Alton Ochsner, New Orleans.

Drs. R. Russell Best and N. Frederick Hicken, Omaha, presented a paper on "Cholangiographic Demonstration of Biliary Dyssynergia and Other Obstructive Lesions of the Gallbladder and Bile Ducts." Discussed by Drs. Frank H. Lahey, Boston, and Waltman Walters, Rochester, Minn.

Dr. Hugh H. Young, Baltimore, read a paper on "Imperforate Anus: Bowel Opening into Urethra: Hypospadias; Presentation of New Plastic Methods." Discussed by Dr. John R. Caulk, St. Louis.

THURSDAY, MAY 14—MORNING

The chairman appointed Dr. Donald Guthrie, Sayre, Pa., to preside in the absence of the vice chairman, Dr. William F. Rienhoff, Baltimore.

Drs. Nelson W. Cornell and Alice R. Bernheim, New York, presented a paper on "The Apparent Influence of Hydrochloric Acid on Bone Growth in Fractures." Discussed by Drs. Harry Shay, Philadelphia; Mandell Shimberg, Leavenworth, Kan., and Nelson W. Cornell, New York.

Dr. Willard Bartlett Jr., St. Louis, read a paper on "Dynamic Tests in Thyrotoxicosis." Discussed by Drs. Evarts A. Graham, St. Louis; John Lucius McGehee, Memphis, Tenn., and Willard Bartlett Jr., St. Louis.

Dr. Roy D. McClure, Detroit, read a paper on "Hypoparathyroidism Following Operations for Hyperparathyroidism Due to Adenoma." Discussed by Drs. Frank H. Lahey, Boston; Brien T. King, Seattle, and Roy McClure, Detroit.

Dr. Howard M. Clute, Boston, read the chairman's address, entitled "The Problem of Cancer of the Pancreas."

Dr. Winchell McK. Craig, Rochester, Minn., read a paper on "Tumors of the Spinal Cord and Their Relation to Medicine and Surgery." Discussed by Drs. Ernest Sachs, St. Louis, and Winchell McK. Craig, Rochester, Minn.

Dr. Richard B. Cattell, Boston, read a paper on "Improvements in the Treatment of Cancer of the Rectum." Discussed by Drs. Fred W. Rankin, Lexington, Ky.; William D. Haggard, Nashville, Tenn., and Richard B. Cattell, Boston.

FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. Robert S. Dinsmore Jr., Cleveland; vice chairman, Dr. Alton Ochsner, New Orleans.

Dr. Fred W. Rankin, Lexington, Ky., read the following report and moved that the section approve the action of its committee as expressed in the recommendations of the National Committee for the elevation of standards of practice of surgery and empower its chairman to appoint three members from this section to serve on the American Board of Surgery, and that the section recommend cooperation with the proposed joint council, which motion was seconded and carried:

At the Atlantic City meeting of the American Medical Association in June 1935 this section appointed a committee of five to cooperate with a committee appointed by the American Surgical Association to consider the elevation of standards of practice of surgery and to increase the hospital facilities for the training of young surgeons.

Your committee met with the other committees at the headquarters of the American College of Surgeons in Chicago, Oct. 23, 1935, under the chairmanship of Dr. Evarts Graham. A committee from the executive committee of the American College of Surgeons, consisting of Drs. Crile, Squire, Harvey, Abell and Crowell joined in this meeting. After prolonged discussion, the representatives of the American College of Surgeons agreed to cooperate in this movement to the extent of appointing six members to create a national committee of twenty-four to discuss ways and means of forming an organization for qualifying surgeons.

At a subsequent meeting February 15 and 16 this committee of twenty-four members met in Chicago. Representation was as follows: American Surgical Association, six; Section on Surgery, General and Abdominal, of the American Medical Association, six; Southern Surgical Association, two; Western Surgical Association, two; Pacific Surgical Association, two. This committee was divided into two committees: (1) to plan for the organization of an American Board of Surgery, and (2) to plan for increasing opportunities for training surgeons. These two committees submitted their reports to the joint committee and the reports were unanimously accepted.

The chairman of the National Committee was authorized to present a plan for creation of an American Board of Surgery to the Executive Committee of the Advisory Board for Medical Specialties. The plan was presented and approved by that body.

This plan proposes that the board consist of thirteen members, allocated as follows:

The American Surgical Association.....	3
The Section on Surgery, General and Abdominal.....	3
The American College of Surgeons.....	3
The Southern Surgical Association.....	1
The Western Surgical Association.....	1
The Pacific Coast Surgical Association.....	1
The New England Surgical Society.....	1

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It is proposed that a group of founders be selected to be qualified without examination consisting of the members of the above-mentioned societies eligible when the board begins to function and, in addition, within the first two years after the board begins to function, those who have limited their practice to surgery for fifteen years may make direct application to the board and with its approval be certified without examination.

Other candidates will be approved by the board after certain requirements have been fulfilled, one of which concerns special training.

For increasing the facilities of training of surgeons, it is recommended that the American College of Surgeons and the American Medical Association be asked to form a joint council to organize and carry out a program for the training of surgeons in proper qualified hospitals, setting up such standards as will meet the requirements of the proposed American Board of Surgery. The American Surgical Association approved the recommendations of its committee as to the formation of an American board and the recommendations of the joint council.

The Pacific Coast Surgical Association and the Executive Committee of the New England Surgical Society have approved in principle the recommendations which the National Committee has made. The American College of Surgeons has approved the recommendations to form a joint council.

It was regularly moved, seconded and carried that the chairman be authorized to appoint three members to cooperate with the National Board of Anesthetists and the Society of Regional

Anesthetists in establishing a national board for certification in anesthesia and to report to the section at the meeting in 1937.

Dr. Frederick A. Collier, Ann Arbor, Mich., read a paper on "The Maintenance of Normal Water Exchange with Intravenous Fluids." Discussed by Drs. Thomas G. Orr, Kansas City, Mo., and Walter G. Maddock, Ann Arbor, Mich.

Dr. Daniel C. Elkin, Atlanta, Ga., read a paper on "Injuries of the Thoracic Viscera." Discussed by Drs. Frederick Christopher, Evanston, Ill., and L. Wallace Frank, Louisville, Ky.

Dr. Clarence E. Bird, Louisville, Ky., read a paper on "The Treatment of Large Pulmonary Abscesses: Report of Ten Cases." Discussed by Drs. Alfred Blalock, Nashville, Tenn.; P. B. Salatch, New Orleans, and Clarence E. Bird, Louisville, Ky.

Dr. George L. Stivers, Fall River, Mass., read a paper on "Indications and Limitations of Intrapleural Pneumolysis in Closing Pulmonary Tuberculous Cavitation." Discussed by Drs. Frank B. Berry, New York; Victor Strong Randolph, Phoenix, Ariz., and George L. Stivers, Fall River, Mass.

Dr. Earl C. Padgett, Kansas City, Mo., read a paper on "Skin Grafting After Extensive Epithelial Loss, with Special Reference to That Following Burns." Discussed by Drs. Gordon B. New, Rochester, Minn.; James B. Brown, St. Louis, and Earl C. Padgett, Kansas City, Mo.

Dr. Vilray Papin Blair, St. Louis, read a paper on "Plantar Warts, Flaps and Grafts." Discussed by Drs. Ellis Fischel, St. Louis; Joseph J. Eller, New York, and Vilray Papin Blair, St. Louis.

## SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Lyle G. McNeile, Los Angeles.

Dr. Frank H. Bethell, Ann Arbor, Mich., read a paper on "The Blood in Normal Pregnancy." Discussed by Drs. R. B. Schutz, Kansas City, Mo.; Adolph Sachs, Omaha, and Frank H. Bethell, Ann Arbor, Mich.

Dr. Louis Rudolph, Chicago, read a paper on "Constriction Ring Dystocia." Discussed by Drs. M. P. Rucker, Richmond, Va.; W. T. Pride, Memphis, Tenn.; Percy B. Russell Jr., Memphis, Tenn., and Louis Rudolph, Chicago.

Drs. Fred L. Adair, Chicago, and A. B. Hunt, Rochester, Minn., presented a paper on "Vascular Collapse in Toxic Patients." Discussed by Drs. Ralph R. Wilson, Kansas City, Mo.; Robert D. Mussey, Rochester, Minn., and Fred L. Adair, Chicago.

Drs. Edward A. Schumann and Adrian W. Voegelin, Philadelphia, presented a paper on "Chorionepithelioma in Philadelphia." Discussed by Drs. P. F. Schneider, Evanston, Ill.; John Rock, Brookline, Mass.; William T. Black, Memphis, Tenn., and Edward A. Schumann, Philadelphia.

Dr. Lewis C. Scheffey, Philadelphia, read a paper on "Carcinoma of the Cervical Stump." Discussed by Drs. J. P. Pratt, Detroit; Henry Schmitz, Chicago; R. Q. Rowse, Sioux City, Iowa, and Lewis C. Scheffey, Philadelphia.

Dr. David R. Murphey Jr., Tampa, Fla., read a paper on "The Treatment of Carcinoma of the Cervix by the Combined Use of Relatively Small Amounts of Radium and High Voltage Roentgen Rays." Discussed by Drs. Fred J. Taussig, St. Louis, and David R. Murphey Jr., Tampa, Fla.

In the absence of Dr. James R. McCord, Atlanta, Ga., Dr. Jennings C. Litzenberg, Minneapolis, was appointed a member of the executive committee by the chairman.

THURSDAY, MAY 14—AFTERNOON

The following papers were read as a symposium on "Obstetric Analgesia":

Drs. Otto S. Krebs, George J. L. Wulff and Helman C. Wassermann, St. Louis: "Scopolamine-Morphine Seminars with Modifications."

Drs. Charles E. Galloway, Robert M. Grier and Robert Blessing, Evanston, Ill.: "Three Years' Experience with Pentobarbital-Sodium and Scopolamine in Obstetrics at the Evanston Hospital."

Drs. Howard F. Kane and George B. Roth, Washington, D. C.: "Relief of Labor Pains by the Use of Paraldehyde and Benzyl Alcohol."

Dr. Gertrude Nielsen, Oklahoma City: "Analgesia in Labor Considered from the Points of View of Medicine and Psychology."

These four papers were discussed by Drs. Buford G. Hamilton, Kansas City, Mo.; Joseph B. De Lee, Chicago; J. L. Baer, Chicago; Rudolph W. Holmes, Chicago; Nicholas J. Eastman, Baltimore; George J. L. Wulff, St. Louis; Frederick V. Emmert, St. Louis; Percy B. Russell Jr., Memphis, Tenn.; S. Kendig Wallace, Baltimore; Otto S. Krebs, St. Louis; Robert M. Grier, Evanston, Ill.; Howard F. Kane, Washington, D. C., and Gertrude Nielsen, Oklahoma City.

Dr. Robert D. Mussey, Rochester, Minn., read the report of the Committee on Maternal Welfare, with the statement that the resolution contained therein would be acted on at the session on Friday:

Your Committee on Maternal Welfare is aware that you are not unfamiliar with the frequently quoted statistics on maternal mortality in this country which show approximately six maternal deaths per thousand live births. Comparison of statistical records of maternal mortality in the United States with those of other countries may lead to erroneous conclusions because of lack of a common basis or measuring stick for the collection of data. In this report we are not concerned with the records of other countries but rather with the necessity of continued effort in this country toward reducing the incidence of preventable obstetric morbidity and mortality.

Since the publication in 1906 by the United States Census Bureau of maternal and infant mortality statistics for the first five years in this century, there has been increasingly coordinated effort to lower maternal and infant mortality. Time does not permit mention of the admirable and time-consuming effort of many local and national organizations which produced a country-wide interest in maternal welfare and which led to the incorporation of the American Committee on Maternal Welfare in April 1934.

In the chairman's address before the meeting of the Committee on Maternal Welfare held at Atlantic City in June 1935, Dr. Fred L. Adair, Chicago, restated the object of the committee. In brief this is as follows:

The object of the American Committee on Maternal Welfare is to promote the interest of the medical profession in cooperation with public and private agencies for the improvement of maternal care and for the prevention of conditions which menace the life and safety of the mother and her offspring during pregnancy and labor and after confinement.

The program as outlined embraced:

1. Education of the public in the principles and practices of health and in the value of efficient antepartum and obstetric care.

2. Improvement and generalization of the standards and methods of training physicians, nurses and others dealing with problems of maternity.

3. The study and the promotion of study of the problems involved in maternal and infant health.

4. The publication and circularization of publications, especially those concerned with this program.

Since incorporation, various organizations in addition to those previously enumerated have been invited to identify themselves officially with this committee and to appoint a representative from their organization to represent it at the meeting. The organizations which are now represented are the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the American Child Health Association, the American College of Surgeons, the American Gynecological Society, the American Hospital Association, the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical

Association, the American Public Health Association, the Central Association of Obstetricians and Gynecologists, the Chicago Maternity Center, the Children's Bureau, U. S. Department of Labor, the Maternity Center Association of New York, the National Organization of Public Health Nursing, the Pacific Coast Society of Obstetrics and Gynecology and the Southern Medical Association.

The committee has sponsored the publication of pamphlets for physicians on Standards of Prenatal Care, on Intranatal or Delivery Care and on The Management of Preeclamptic Toxemia and Eclampsia, and a pamphlet on Standards of Post-natal Care is soon to be published. Believing that there should be a uniform standard for febrile maternal morbidity, the committee has defined it as a fever of 100.4 F. (38 C.) on any two of the first ten days post partum, exclusive of the first twenty-four hours. The temperature should be taken by mouth by the standard technic at least four times daily.

Since its incorporation, the committee has attempted to stimulate the formation of state committees on maternal welfare and their work is now in active progress. Some states already had committees functioning in this capacity, but most of them had not. One of two plans of procedure has been followed in the formation of these state committees. The first contemplated official action by the state medical societies in the formation of such a committee with the thought that each state committee would guide and direct the formation of local committees in each of the county or district societies of its state. This plan was preferred because it was felt that a maternal welfare program would in this way become an official part of the activities of the various state and local medical societies. In the states in which this plan does not appear to be feasible, the national committee has endeavored to secure the active interest of members of the medical profession in leading the activities in their state and in securing the appointment of the necessary local committees throughout that state. The national committee has felt that it should not in any way attempt to dictate the activities of these various committees. It does sincerely believe that such activities on the part of obstetricians and general practitioners are not only advisable but essential for the welfare of both the mother and her infant, on whom the future of the community rests.

Several obstetric and gynecologic organizations are considering the possibility of holding a national congress of obstetrics and gynecology in 1938 or 1939. This subject was brought to the attention of your committee by the American Committee on Maternal Welfare, which favors and is willing to sponsor and promote a National Congress of Obstetrics and Gynecology, if the various organizations interested in these specialties favor such a meeting. Your committee believes that this proposed congress would develop a community of interest and thought in obstetrics and gynecology which would greatly enhance the knowledge of these subjects. Therefore, this committee wishes to present to the Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association the following resolution:

*Resolved*, That the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association favors and will participate in the plan of holding a National Congress of Obstetrics and Gynecology in 1938 or 1939, provided this congress is participated in by other representative groups of these specialties and that the promotion and arrangements for this congress be undertaken by a national organization such as the American Committee on Maternal Welfare.

Pertinent to this report is a résumé of the provisions relating to maternal welfare in the Social Security Act adopted by Congress and approved by the President on Aug. 14, 1935. Provisions of the act relating to maternal and child welfare are described under item V, "Grants to States for Maternal and Child Welfare." The purpose of federal grants in brief is to enable and assist each state to extend and improve, as far as is practicable under conditions in such state, services for promoting the health of mothers and children, especially in rural areas and in areas suffering from economic distress.

The federal administration of this part of the act is under the immediate direction of the Maternal and Child Health Division of the Children's Bureau, headed by a physician and receiving general supervision from the assistant chief of the Children's Bureau, who is also a physician.

Before any state plan is approved, certain requirements must have been accepted. Among the seven legal requirements for state plans are the following that directly affect the medical profession:

Administration of the plan or supervision of administration of the plan by the state health agency (which in every state is headed by a physician).

Extension and improvement of local maternal and child health services.

Cooperation of demonstration services in needy areas and among groups in special need.

The Advisory Committee of the Children's Bureau on maternal and child welfare services under the Social Security Act included the following obstetricians: Fred L. Adair, Chicago; Robert L. De Normandie, Boston; George W. Kosmak, New York; Lyle G. McNeile, Los Angeles; Everett D. Plass, Iowa City; Philip Williams, Philadelphia, and James R. McCord, Atlanta, Ga.

The advice and suggestions of the advisory committees have in large part formed the basis for the acceptance by the Children's Bureau of plans of the states, which have conformed to the act and are now carrying out the program.

These advisory committees made the following suggestions with respect to state programs for maternal and child health at their meetings in December 1935:

1. That a division of maternal and child health, with a physician for director, be established under the state department of health in each state. (This has been done by every state whose plan has been approved—forty-one approved state plans on April 20, 1936.)

2. That additional state medical staff for consultation and advisory service should consist of full time or part time physicians with training and experience in either maternal or child health work, preferably both.

3. That there be regional advisers to professional groups in the fields of pediatrics, obstetrics and dentistry.

4. That the maternal and child health services by local or other qualified physicians should be arranged for jointly by the local health department and the local medical association with the advice of the director of the state division of maternal and child health.

5. That as far as possible the maternal and child health work in any given area should be carried by local and qualified physicians and, where such are not available, that other arrangements be made in local maternal and child health centers.

6. That medical men taking part in the program should be paid for their services.

7. That there should be cooperation of local and county medical organizations in the educational programs (local and state) to be carried out for professional and lay groups.

The state law under which the program arranged by the Minnesota Department of Health is being conducted may be cited as an example of what may be done under the provision of this act: "The Division of Child Hygiene of the Minnesota Department of Health is limited by state law to a program of an educational nature which automatically eliminates from the work of the division all activities which aim at clinical supervision and treatment or with giving material aid of any kind."

Dr. Lyle G. McNeile, Los Angeles, read the chairman's address, entitled "Trends in American Obstetrics During the First Third of This Century."

Drs. James R. Reinberger and Percy B. Russell Jr., Memphis, Tenn., presented a paper on "The Conservative Treatment of Abortion." Discussed by Drs. J. C. Litzenberg, Minneapolis; Thomas K. Brown, St. Louis; Channing W. Barrett, Chicago; Rudolph W. Holmes, Chicago; W. T. Pride, Memphis, Tenn.; Joseph B. De Lee, Chicago; Lyle G. McNeile, Los Angeles, and James R. Reinberger, Memphis, Tenn.

#### FRIDAY, MAY 15—AFTERNOON

It was regularly moved, seconded and carried that the following resolution be adopted:

*Resolved*, That the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association favors and will participate in the plan of holding a National Congress of Obstetrics and Gynecology



in 1938 or 1939, provided this congress is participated in by other representative groups of these specialties and that the promotion and arrangements for this congress be undertaken by a national organization such as the American Committee on Maternal Welfare.

The secretary read the report of the executive committee, as follows:

The Committee met in the Municipal Auditorium May 13, 1936, at 5 o'clock. Present: Lyle G. McNeile, Los Angeles; Joseph B. De Lee, Chicago, and J. C. Litzenberg, Minneapolis, acting in place of J. R. McCord, Atlanta, Ga., and the secretary.

The committee agreed to nominate Dr. Fred J. Taussig, St. Louis, to the American College of Surgeons as a candidate for the board of governors of the college.

The committee considered the advisability of asking the House of Delegates to change the name of the section from the Section on Obstetrics, Gynecology and Abdominal Surgery to Section on Obstetrics and Gynecology, and instructed the secretary to prepare a resolution for presentation at this meeting. The resolution offered reads as follows:

WHEREAS, The Council on Medical Education and Hospitals has recently recognized Obstetrics and Gynecology as a specialty, and

WHEREAS, The Scientific Assembly provides adequately for the discussion of problems of abdominal surgery within the Section on Surgery; therefore be it

Resolved, That the Section on Obstetrics, Gynecology and Abdominal Surgery request the House of Delegates to change the name of the section to the Section on Obstetrics and Gynecology, and further be it

Resolved, That the Section on Obstetrics, Gynecology and Abdominal Surgery instruct its delegate to present this resolution to the House of Delegates at its regular meeting in 1937.

The Chairman, Dr. Lyle G. McNeile, announced appointment of the following Committee on Maternal Welfare: Dr. James R. Miller, Hartford, Conn.; Dr. Robert D. Mussey, Rochester, Minn., and Dr. William Benbow Thompson, Los Angeles.

It was regularly moved, seconded and carried that the resolution to change the name of the section to the Section on Obstetrics and Gynecology be adopted.

It was regularly moved, seconded and carried that the nomination of Dr. Fred J. Taussig, St. Louis, to the American College of Surgeons as a candidate for the board of governors of the college be confirmed.

The following officers were elected: chairman, Dr. M. Pierce Rucker, Richmond, Va.; vice chairman, Dr. Buford G. Hamilton, Kansas City, Mo.; secretary, Dr. Everett D. Plass, Iowa City, continued in office; delegate, Dr. George Gray Ward, New York; alternate, Dr. Jean P. Pratt, Detroit.

On motion made by Dr. H. C. Hesseltine, Chicago, and seconded, it was voted that the secretary express the appreciation of the members of the section to the Kansas City Society of Obstetrics and Gynecology for their gracious and exceptional courtesies and hospitalities.

Drs. John C. Burch, G. S. McClellan and Claud D. Johnson, Nashville, Tenn., presented a paper on "The Diagnosis and Classification of Menstrual Disturbances." Discussed by Drs. J. P. Pratt, Detroit; E. C. Hamblen, Durham, N. C., and John C. Burch, Nashville, Tenn.

Drs. Lawrence R. Wharton and Erle Henriksen, Baltimore, presented a paper on "The Operative Observations in Periodic Intermenstrual Pain." Discussed by Drs. J. P. Greenhill, Chicago; J. M. Singleton, Kansas City, Mo.; Cyrus W. Anderson, Denver, and Lawrence R. Wharton, Baltimore.

Drs. Preston T. Brown, Phoenix, Ariz., and Erwin von Graff, Des Moines, Iowa, presented a paper on "The Diagnosis of Ectopic Pregnancy." Discussed by Drs. Theodore H. Aschmann, Kansas City, Mo.; Walter T. Dannreuther, New York, and Erwin von Graff, Des Moines, Iowa.

Dr. William Benbow Thompson, Los Angeles, read a paper on "Cesarean Section in Los Angeles County." Discussed by Drs. Rudolph W. Holmes, Chicago; H. C. Hesseltine, Chicago; J. P. Greenhill, Chicago, and William Benbow Thompson, Los Angeles.

Dr. Howard F. West, Los Angeles, read a paper on "Diabetes and Pregnancy." Discussed by Drs. William F. Mengert,

Iowa City; Ralph H. Major, Kansas City, Mo., and Howard F. West, Los Angeles.

Dr. Julius Jensen, St. Louis, read a paper on "Heart Disease and Pregnancy." Discussed by Drs. L. A. Calkins, Kansas City, Mo.; Ralph H. Luikart, Omaha, and Julius Jensen, St. Louis.

## SECTION ON OPHTHALMOLOGY

WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. John Green, St. Louis.

Dr. John Green, St. Louis, read the chairman's address.

Drs. C. S. O'Brien and A. E. Braley, Iowa City, presented a paper on "Tumors of the Eyelids: A Clinical and Pathologic Study." Discussed by Drs. Arnold Knapp, New York; Algernon B. Reese, New York, and C. S. O'Brien, Iowa City.

Dr. William L. Benedict, Rochester, Minn., read a paper on "Adenocarcinoma of the Orbit." Discussed by Drs. Martin Cohen, New York; Walter E. Camp, Minneapolis, and Arnold Knapp, New York.

Dr. Alfred Cowan, Philadelphia, read a paper on "Causes of Blindness in Pennsylvania, from the Medical and Social Aspects." Discussed by Drs. E. V. L. Brown, Chicago; William H. Crisp, Denver; Conrad Berens, New York, and Alfred Cowan, Philadelphia.

Dr. Edward Jackson, Denver, read a paper on "The True Importance of Aniseikonia." Discussed by Drs. Adelbert Ames, Hanover, N. H.; Walter B. Lancaster, Boston; Alfred Bielschowsky, Hanover, N. H.; Conrad Berens, New York; William F. Hardy, St. Louis; Otto Barkan, San Francisco, and Edward Jackson, Denver.

Dr. Warren D. Horner, San Francisco, read a paper on "Cataracts Following Dinitrophenol Treatment for Obesity." Discussed by Drs. Arthur J. Bedell, Albany, N. Y.; Albert D. Frost, Columbus, Ohio; Earl Whedon, Sheridan, Wyo.; Charles Lukens, Toledo, Ohio; Thurber Le Win, Buffalo; Otto Barkan, San Francisco, and Warren D. Horner, San Francisco.

THURSDAY, MAY 14—MORNING

Dr. Albert C. Snell, Rochester, N. Y., read a paper on "A Statistical Study of Functional Muscle Tests in Axial Myopia." Discussed by Drs. Bennett Y. Alvis, St. Louis; Thomas D. Allen, Chicago; Alfred Bielschowsky, Hanover, N. H., and Albert C. Snell, Rochester, N. Y.

The chairman, Dr. John Green, St. Louis, called for an executive session to consider a resolution.

It was moved by Dr. Arthur J. Bedell, Albany, N. Y., duly seconded and carried, that the following resolution be presented to the House of Delegates Thursday afternoon:

WHEREAS, At the 1934 session of the American Medical Association a resolution emanating from this section was approved by the House of Delegates whereby we registered our disapproval of the employment of optometrists by hospitals; and

WHEREAS, At the Atlantic City session of this section we presented a resolution to the House of Delegates of the American Medical Association which in substance stated that we were opposed to the association of our members and those of the optical trade; and

WHEREAS, This resolution was adopted by the House of Delegates; and

WHEREAS, There are attempts to force some ophthalmologists to instruct students of optometry; and

WHEREAS, We believe this unwise, unethical and inadvisable; therefore, be it

Resolved, That we, the Section on Ophthalmology, instruct our delegate to the House of Delegates to present this resolution as an expression of our views with the hope that this action will be officially approved and given wide publicity through the pages of THE JOURNAL.

The executive session was terminated on motion, duly seconded and carried.

Dr. Webb W. Weeks, New York, read a paper on "Critical Analysis of Glaucoma Operations."

Dr. John M. Wheeler, New York, read a paper on "Iridectomy with Cyclodialysis for Reduction of Ocular Tension."

These two papers were discussed by Drs. Harry S. Gradle, Chicago; Philip D. O'Connor, Chicago; John O. McReynolds, Dallas, Texas; Frank E. Burch, St. Paul; Otto Barkan, San

Francisco; Sanford Gifford, Chicago; Warren D. Horner, San Francisco; Webb W. Weeks, New York, and John M. Wheeler, New York.

Dr. Nathan K. Lazar, Chicago, read a paper on "Early Eye Complications in Meningococcic Meningitis." Discussed by Drs. Archibald L. Hoyne, Chicago; Parker Heath, Detroit; Henry C. Haden, Houston, Texas; Albert H. Mann, Texarkana, Texas, and Nathan K. Lazar, Chicago.

At the Demonstration Session the following were shown:  
Dr. Clifford B. Walker, Los Angeles, presented new methods in galvanic and diathermic treatment of retinal detachment.

Dr. Grady E. Clay, Atlanta, Ga., presented grafts from the prepuce and labia minora for the conjunctiva and restoration of the socket.

Dr. Otto Barkan, San Francisco, presented an operation for chronic primary glaucoma and for opening Schlemm's canal under direct vision using a contact glass.

Dr. Everett C. Moulton, Fort Smith, Ark., presented a case of bilateral anterior lenticonus.

Dr. Walter S. Atkinson, Watertown, N. Y., presented a retrobulbar injection within the muscular cone or cone injection.

Dr. Charles N. Spratt, Minneapolis, presented the use of Callahan tubes in the treatment of lacrimal stenosis and chronic dacryocystitis.

Dr. Walter B. Lancaster, Boston, presented a magnet.

Dr. Leo Loeb Mayer, Chicago, presented a neon flash illuminated perimeter.

Dr. William H. Luedde, St. Louis, presented a transparent exophthalmometer.

Dr. T. D. Allen, Chicago, presented a simple cone for tangent screen.

Dr. Conrad Berens, New York, presented a lens for patients with detachment of the retina, and a retractor to be used in operations for detachment of the retina.

Dr. Parker Heath, Detroit, presented a set of instruments for lid treatment.

FRIDAY, MAY 15—MORNING  
*Executive Session*

Dr. Harry S. Gradle, Chicago, presented the report of the Committee on Compensation Tables. The report was adopted and the committee continued.

Dr. Edward Jackson, Denver, presented the report of the American Committee on Optics and Visual Physiology. The report was accepted.

The report of the Committee on the Knapp Testimonial Fund was presented by the treasurer, Dr. Parker Heath, Detroit. The report was accepted.

For the Committee on Awarding the Knapp Medal, Dr. William E. Shahan, St. Louis, reported that no award would be made this year.

The report of the Committee on the American Board of Ophthalmology was read by Dr. John Green, St. Louis. The report was accepted.

The report of Dr. Jonas S. Friedenwald, Baltimore, for the Committee on National Museum of Ophthalmic Pathology was read by Dr. Parker Heath, Detroit. The report was accepted.

The report of Chairman Thomas B. Holloway, Philadelphia, for the Committee from the Section to Cooperate with the National Committee for the Prevention of Blindness was read by Dr. Parker Heath, Detroit. The report was accepted.

Dr. Albert N. Lemoine, Kansas City, Mo., read the report of the Committee on Scientific Exhibit from the Section. The report was accepted.

Dr. Emory Hill, Richmond, Va., reported as section delegate to the House of Delegates.

There was no report from the Committee on Museum of Ophthalmic History; the committee was continued.

The report of the Committee on Ophthalmic Standards was presented by Dr. Clifford B. Walker, Los Angeles. The report was accepted and the committee continued.

The following officers were elected: chairman, Dr. William L. Benedict, Rochester, Minn.; vice chairman, Emory Hill, Richmond, Va.; secretary, Dr. Parker Heath, Detroit, continued in office.

Dr. S. J. Beach, Portland, Maine, was appointed as member of the American Board of Ophthalmology to fill the one year term expired of Dr. John Green.

Dr. Walter B. Lancaster, Boston, was reappointed to fill a vacancy on the American Committee (Joint) on Optics and Visual Physiology.

Dr. Georgiana Dvorak Theobald, Oak Park, Ill., was appointed to fill the vacancy of chairman of the Committee for Scientific Exhibit from the Section.

The chairman announced that there was no award of the Ophthalmic Research Medal of the American Medical Association this year.

The following members were elected to serve as the Knapp Medal Award Committee: Drs. E. V. L. Brown, Chicago; C. A. Clapp, Baltimore, and Frederick H. Verhoeff, Boston, chairman.

Dr. Albert L. Brown, Cincinnati, read a paper on "Effect of Intra-Ocular Typhoid Antibody Concentration on Experimental Corneal Ulcers." Discussed by Drs. Charles A. Bahn, New Orleans; Phillips Thygeson, Iowa City, and Albert L. Brown, Cincinnati.

Dr. Bertha A. Klien, Chicago, read a paper on "Malformations of the Posterior Segment of the Human Eye: An Embryologic Interpretation." Discussed by Drs. Henry C. Haden, Houston, Texas; Derrick T. Vail, Cincinnati, and Bertha A. Klien, Chicago.

Drs. Norman P. Scala, Washington, D. C., and Ernest A. Spiegel, Philadelphia, presented a paper on "The Cortical Innervations of Ocular Movements." Discussed by Drs. Alfred Bielschowsky, Hanover, N. H., and Ernest A. Spiegel, Philadelphia.

Dr. Harvey D. Lamb, St. Louis, read a paper on "Clinical and Anatomic Observations in Fellow Eyes with Chronic Tuberculous Uveitis." Discussed by Drs. Beulah Cushman, Chicago; Lawrence T. Post, St. Louis, and Harvey D. Lamb, St. Louis.

Dr. J. L. Bressler, Houston, Texas, read a paper on "A Study of More Than Two Hundred Postoperative Strabismus Cases." Discussed by Drs. Conrad Berens, New York; Albert N. Lemoine, Kansas City, Mo., and J. L. Bressler, Houston, Texas.

SECTION ON LARYNGOLOGY, OTOTOLOGY  
AND RHINOLOGY

WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Ralph A. Fenton, Portland, Ore.

Dr. Lyman G. Richards, Boston, read a paper on "Pitfalls in the Diagnosis and Treatment of Retropharyngeal Abscess in Children." Discussed by Drs. Samuel Iglauer, Cincinnati; Horace R. Lyons, Chicago; E. Frank Chase, Seattle; Gabriel Tucker, Philadelphia; William D. Black, St. Louis, and Lyman G. Richards, Boston.

Dr. Edward Cecil Sewall, San Francisco, read a paper on "Chronic Sinusitis: The Source and Carrier of the Common Cold." Discussed by Drs. Virgil W. McCarty, Kansas City, Mo.; T. R. Gittins, Sioux City, Iowa; Howard C. Ballenger, Winnetka, Ill.; Robert F. Ridpath, Philadelphia; Herman Semenov, Los Angeles, and Edward C. Sewall, San Francisco.

The application of Dr. Herman Brown, D.D.S., Irvington, N. J., was approved for Associate Fellowship in the American Medical Association.

Dr. Harris P. Mosher, Boston, read a paper on "Osteomyelitis of the Frontal Bone." Discussed by Drs. Ernest Sachs, St. Louis; John J. Shea, Memphis, Tenn.; O. Jason Dixon, Kansas City, Mo.; Joseph E. J. King, N. Y., and Harris P. Mosher, Boston.

Dr. Marvin M. Cullom, Nashville, Tenn., read a paper on "The Chronicity of Sinus Disease and Its Relation to Middle Ear Infection and Deafness." Discussed by Drs. Willis F.

Manges, Philadelphia; Carrol L. Smith, Spokane, Wash; O. S. Gilliland, Kansas City, Mo., and Marvin M. Cullom, Nashville

Dr Henry M. Goodyear, Cincinnati, read a paper on "The Etiology and Treatment of Hemorrhage of the Nose and Throat" Discussed by Drs Frank R. Spencer, Boulder, Colo., Sam E. Roberts, Kansas City, Mo., Thomas C. Galloway, Evanston, Ill., and Henry M. Goodyear, Cincinnati

#### THURSDAY, MAY 14—AFTERNOON

Dr Ralph A. Fenton, Portland, Ore., read the chairman's address, entitled "The Physiologic Approach to Otolaryngology"

Dr Albert Kuntz, St. Louis, read a paper on "The Autonomic Nervous System in Relation to Otolaryngology" Discussed by Drs Leo Stone, Topeka, Kan.; Gordon F. Harkness, Davenport, Iowa; Harris H. Vail, Cincinnati, and Albert Kuntz, St. Louis

Drs Loyal Davis and Edwin J. Blonder, Chicago, presented a paper on "The Galvanic Filling Reaction in Patients with Verified Intracranial Neoplasms"

Drs George M. Coates, Benjamin H. Shuster and Herman B. Slotkin, Philadelphia, presented a paper on "The Vestibular (Barany) Tests in the Diagnosis and Localization of Intracranial Lesions"

These two papers were discussed by Drs Winchell McK. Craig, Rochester, Minn.; Claude T. Uren, Omaha; John C. McKinley, Minneapolis; Sam E. Roberts, Kansas City, Mo.; Edwin J. Blonder, Chicago, and George M. Coates, Philadelphia

Dr Porter P. Vinson, Rochester, Minn., read a paper on "The Diagnosis and Treatment of Primary Malignant Disease of the Tracheobronchial Tree" Discussed by Drs John D. Kernan, New York; Edward H. Skinner, Kansas City, Mo.; Millard F. Arbuckle, St. Louis; Edwin N. Broyles, Baltimore, and Porter P. Vinson, Rochester, Minn.

Drs Samuel J. Crowe, and Edwin N. Broyles, Baltimore, presented a paper on "Late Results Following Operations for the Cure of Carcinoma of the Larynx" Discussed by Drs Gabriel Tucker, Philadelphia; Murdock S. Euen, Atlanta, Ga.; Gordon B. New, Rochester, Minn.; Louis H. Clerf, Philadelphia; E. Lee Myers, St. Louis, and Edwin N. Broyles, Baltimore

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman Robert F. Ridpath, Philadelphia; vice chairman Leroy A. Schall, Boston; secretary, Gordon B. New, Rochester, Minn.

Dr John J. Shea, Memphis, Tenn., reported for the American Board on Otolaryngology that they had held two examinations during 1935, one in New York City before the American Medical Association meeting, and the other before the meeting of the American Academy of Ophthalmology and Otolaryngology in Cincinnati. There were 146 candidates examined, of whom 113 passed and forty-five failed, the total number certificated to date being 2,411. It is of interest historically to see the growth of the examining boards now numbering nine with three in the stage of formation. The trail was originally blazed by the Ophthalmological Board and the Board of Otolaryngology. It is worthy of record to state that the idea of forming an advisory board for the various specialties originated in the Board of Otolaryngology. The advisory board is holding rigidly to the original conception that it should be an advisory board and not one of regulation. The advisory board in conjunction with the Council on Medical Education and Hospitals of the American Medical Association has limited the specialties in medicine to twelve. The report was received and placed on file.

Dr H. Marshall Taylor, Jacksonville, Fla., gave the report of the Committee on Hygiene of Swimming. The report was received and filed.

Dr Herman Semenov, Los Angeles, read a paper on "Otitis Media in Infants and Adults. A Histopathologic Study" Discussed by Drs William A. Wagner, New Orleans; Louis K. Guggenheim, St. Louis, and Herman Semenov, Los Angeles.

Dr H. I. Profant, Santa Barbara, Calif., read a paper on "Petrositis"

Dr Wells P. Eagleton, Newark, N. J., read a paper on "Osteomyelitis of the Inferior Surface of the Petrous Pyramid"

These two papers were discussed by Drs George M. Coates, Philadelphia; Harold I. Lillie, Rochester, Minn.; Mervin C. Myerson, New York; H. J. Profant, Santa Barbara, Calif.; and Wells P. Eagleton, Newark, N. J.

Dr James B. Costen, St. Louis, read a paper on "Neuralgias and Ear Symptoms Associated with Disturbed Function of the Temporomandibular Joint" Discussed by Drs Roland M. Klemme, St. Louis; Wendell G. Scott, St. Louis; Sam E. Roberts, Kansas City, Mo.; and James B. Costen, St. Louis.

Drs Walter B. Hoover and James L. Poppen, Boston, presented a paper on "Glossopharyngeal Neuralgia" Discussed by Drs J. Jay Keegan, Omaha; French K. Hansel, St. Louis, and Walter B. Hoover, Boston.

#### SECTION ON PEDIATRICS

##### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. Horton R. Casparis, Nashville, Tenn.

Dr. Horton R. Casparis, Nashville, Tenn., read the chairman's address, entitled "Some of the Preventive Aspects of the Mental Health Problem"

Dr. Lvarts A. Graham, St. Louis, read a paper on "Surgical Aspects of Chronic Lung Infections in Children"

Drs Chevalier Jackson and Chevalier L. Jackson, Philadelphia, presented a paper on "Acute Infective Laryngotracheobronchitis of Children" Discussed by Drs Joseph Brennemann, Winnetka, Ill.; Clifford G. Grulee, Evanston, Ill.; Isaac A. Abt, Chicago; Ralph M. Tyson, Philadelphia, and Chevalier L. Jackson, Philadelphia.

Drs Adolph G. DeSanctis and Edward W. Peterson, New York, presented a paper on "Appendicitis in Children: A Survey of Three Hundred Cases" Discussed by Drs Rupert F. Carter, New York, and Leslie O. Ashton, New York.

Dr Percival Nicholson, Ardmore, Pa., read a paper on "Mechanical Lesions of the Appendix in Children as a Basis for Appendicitis" Discussion on the previous paper continued, in conjunction with discussion of Dr. Nicholson's paper, by Drs Walter Estell Lee, Philadelphia; Roland Hill, St. Louis; W. Ambrose McGee, Richmond, Va.; L. R. De Buys, New Orleans; Clifford Sweet, Oakland, Calif.; Joseph Brennemann, Winnetka, Ill.; Adolph G. DeSanctis, New York, and Percival Nicholson, Ardmore, Pa.

The chairman appointed Drs Clifford Sweet, Oakland, Calif.; Oscar Reiss, Los Angeles, and Leslie Moore, Dallas, Texas, as a resolutions committee.

Dr Robert A. Strong, New Orleans, read a paper on "Nanthomatosis (Schuller-Christian's Disease)" Discussed by Drs H. R. Wahl, Kansas City, Mo.; John Zahorsky, St. Louis, and Robert A. Strong, New Orleans.

##### THURSDAY, MAY 14—AFTERNOON

Dr Jean V. Cooke, St. Louis, read a paper on "Active Artificial Immunization in Diphtheria: The Relative Effectiveness of Various Antigens, and the Duration of the Immunity" Discussed by Drs Charles R. Barr, Philadelphia; J. V. Greenbaum, Cincinnati; H. F. Helmholtz, Rochester, Minn., and Jean V. Cooke, St. Louis.

Drs C. A. Neymann and S. L. Osborne, Chicago, presented a paper on "The Treatment of Chorea by Means of Electroparalysis" Discussed by Drs Maurice L. Blatt, Chicago, and C. A. Neymann, Chicago.

Dr Albert W. Snoke, San Francisco, read a paper on "The Classification and Prognosis of Glomerular Nephritis in Childhood" Discussed by Drs H. F. Helmholtz, Rochester, Minn., and Albert W. Snoke, San Francisco.

Dr Julius H. Hess, Chicago, read a paper on "The Chicago City-Wide Plan for the Care of Premature Infants" Discussed by Drs Maurice L. Blatt, Chicago, and William J. Orr, Buffalo.

Dr Aphrodite J. Hofsommer, Webster Groves, Mo., read a paper on "Lip Reading and the Intelligence Quotient of the Hard of Hearing Child" Discussed by Drs Horace Newhart,

Minneapolis; Horton R. Casparis, Nashville, Tenn., and Aphrodite J. Hofsommer, Webster Groves, Mo.

Dr. John Hart Davis, Cleveland, read a paper on "Segmental Neuralgia in Childhood Simulating Visceral Disease." Discussed by Drs. John A. Toomey, Lakewood, Ohio; Hugh L. Dwyer, Kansas City, Mo., and John Hart Davis, Cleveland.

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman, Dr. Ralph M. Tyson, Philadelphia; vice chairman, Dr. Aldrich C. Crowe, Ocean City, N. J.; secretary, Dr. Albert D. Kaiser, Rochester, N. Y.; executive committee: Dr. A. Graeme Mitchell, Cincinnati; Dr. Horton R. Casparis, Nashville, Tenn., and Dr. Ralph M. Tyson, Philadelphia; delegate, Dr. William Weston, Columbia, S. C.; alternate, Dr. A. Graeme Mitchell, Cincinnati; representative to serve on American Board of Pediatrics, Dr. Frank P. Gengenbach, Denver.

Dr. Frank C. Neff, Kansas City, Mo., presented the Report of the Committee on the Jacobi Fund as follows:

Dr. Olin West, who is, as you know, the Secretary and General Manager of the American Medical Association, has written to me that the Association cannot continue to publish the bound volumes of the Transactions of the various sections unless there come at least 350 orders for the particular section volume. It seems to many of us that it would be unfortunate to have an interruption in the archives of this section. The subscribers to the Jacobi Fund have made it possible thus far to continue our Transactions. It will be necessary either for the Jacobi Fund to underwrite the loss which the Association undergoes or there will be no continuance of our available printed records.

The Jacobi Committee, therefore, will undertake to secure enough subscriptions so that at least 350 copies of the Transactions may be assured the publishers. For this reason we are asking the friends of the section to subscribe in greater numbers, and we are reducing the amount asked to \$3 in the hope that many more will care to aid the fund and secure the volume. The committee is also asking that the number of men on the committee be reduced to three, instead of five, making it easier to have committee meetings. The personnel of the committee, therefore, will consist of each retiring chairman of this section, who will hold office for three years. It is expected within another year or two to make the secretary of the section, who actually holds office for three years, the active secretary and treasurer of the Jacobi Fund during that term. We would like to have a motion from the floor at the conclusion of this report regarding your wishes as to the Transactions, and the other changes suggested.

We wish to emphasize at this time the announcement which is appearing in the medical journals of the dedication of the monument to the memory of Abraham Jacobi, which is to take place on Saturday, June 13, at 2 p. m., at the beautiful shore village of Bolton Landing, Lake George, N. Y. This spot can be reached by bus or highway, and any physicians who may wish to do so are invited to attend the final session of the American Pediatric Society at that village Saturday morning, June 13, at 9:30, remaining for the dedication of the Jacobi Memorial in the afternoon. An interesting program has been prepared with well known pediatricians and educators, who will speak during the dedication. The Jacobi Memorial Fund is sponsor for the erection of this monument, to the memory of the much beloved pioneer who held the first chair in the teaching of pediatrics in America and who was an honored president of the American Medical Association. Dr. Frederic W. Schlutz, Chicago, of this section will be the presiding officer.

The finances of the Jacobi Fund are in excellent condition. A report thereof will be sent for publication by the American Medical Association and will appear, we hope, in another issue of the Transactions.

THE COMMITTEE OF THE ABRAHAM JACOBI  
MEMORIAL FUND, SECTION ON PEDIATRICS.  
J. I. DURAND, Seattle, 1936,  
Chairman.

FREDERIC W. SCHLUTZ, Chicago, 1937.  
ALFRED A. WALKER, Birmingham, Ala., 1938.  
GRAEME MITCHELL, Cincinnati, 1939.  
FRANK C. NEFF, Kansas City, Mo.,  
Secretary.

On motion of Dr. Oscar Reiss, Los Angeles, regularly seconded, it was voted that the report be adopted.

Dr. Norman Ward Clein, Seattle, read a paper on "Allergy as the Cause of Frequent Colds and Chronic Coughs in Children." Discussed by Drs. Ralph Bowen, Oklahoma City; George Piness, Los Angeles; James C. Overall, Nashville, Tenn.; F. M. Pottenger Jr., Monrovia, Calif., and Norman Ward Clein, Seattle.

Dr. Clifford Sweet, Oakland, Calif., read a paper on "Voluntary Food Habits of Normal Children." Discussed by Drs. W. C. C. Cole, Detroit; J. D. Boyd, Iowa City, and Clifford Sweet, Oakland, Calif.

Dr. Joseph C. Regan, Brooklyn, read a paper on "Changes in Acid Base Equilibrium in Whooping Cough: Relation to the Underlying Pathogenesis of the Disease—Therapeutic Significance." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; W. Ambrose McGee, Richmond, Va., and Joseph C. Regan, Brooklyn.

Drs. Emil Bogen, Olive View, Calif., and M. A. Gifford, Bakersfield, Calif., presented a paper on "Immunization Against Infantile Paralysis." Discussed by Drs. J. P. Leake, Washington, D. C.; M. A. Gifford, Bakersfield, Calif.; Percival Nicholson, Ardmore, Pa.; S. D. Kramer, Brooklyn, and Emil Bogen, Olive View, Calif.

Dr. Paul H. Harmon, Chicago, read a paper on "Significance of Poliocidal Substances in Resistance and Recovery from Poliomyelitis." Discussed by Drs. Sydney O. Levinson and Paul H. Harmon, Chicago.

Dr. Archibald L. Hoyne, Chicago, read a paper on "Intravenous Treatment of Meningococcic Meningitis with Meningococcus Antitoxin." Discussed by Drs. Albert G. Bower, Glendale, Calif.; Gerald F. Kempf, Indianapolis; Gilbert J. Levy, Memphis, Tenn., and Archibald L. Hoyne, Chicago.

## SECTION ON PHARMACOLOGY AND THERAPEUTICS

### WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Chauncey D. Leake, San Francisco.

On motion by Dr. Leonard G. Rowntree, Philadelphia, seconded and carried, it was voted that Dr. H. A. Shoemaker, professor of pharmacology, University of Oklahoma, be recommended to the House of Delegates as an Associate Fellow in the Association.

On motion by Dr. Leonard G. Rowntree, Philadelphia, seconded and carried, it was voted that approval be given to the resolution approving the action of the House of Delegates in petitioning Congress to allot at least 5,000,000 cubic feet of helium annually for medicinal purposes.

On motion by Dr. Rowntree, seconded and carried, a resolution to the House of Delegates of the American Medical Association was approved that the proper American Medical Association agencies make public whatever information is available regarding the medical aspects of chemical contraceptives.

On motion of Dr. Irving Wright, New York, seconded and carried, it was voted to endorse the plea for a Section on Anesthesia and to protest against expanding the Section on Pharmacology and Therapeutics to include anesthesia.

It was moved by Dr. Charles W. Dunn, Philadelphia, seconded and carried, that the House of Delegates be asked to petition Congress to apply the same regulations to the advertising of drugs as now apply to the labeling of them.

Drs. Charles Mazer and S. Leon Israel, Philadelphia, presented a paper on "Studies on the Optimal Dosage of Estrogenic Substances." Discussed by Drs. J. P. Pratt, Detroit; Marguerite S. Williams, Tucson, Ariz.; Elmer L. Sevringhaus, Madison, Wis.; Chauncey D. Leake, San Francisco, and Charles Mazer, Philadelphia.

Drs. Willard O. Thompson, Phoebe K. Thompson, Samuel G. Taylor III and William S. Hoffman, Chicago, presented a paper on "An Extract of the Adrenal Cortex Effective in Addison's Disease." Discussed by Drs. Russell M. Wilder, Rochester, Minn.; Leonard G. Rowntree, Philadelphia, and Willard O. Thompson, Chicago.

Drs. Leonard G. Rowntree and N. H. Einhorn, Philadelphia, and A. M. Hanson, Faribault, Minn., presented a paper on "The Role of the Thymus and Pineal Gland in Growth and Development." Discussed by Drs. Chauncey D. Leake, San

Francisco; George E. Wakerlin, Louisville, Ky.; John Z. Brown, Salt Lake City; Willard O. Thompson, Chicago, and Leonard G. Rowntree, Philadelphia.

Dr. Wolfgang Heubner, Berlin, Germany, read a paper on "Need for International Scientific Nomenclature for Therapeutic Substances." Discussed by Drs. Bernard Fantus, Chicago; John Z. Brown, Salt Lake City; W. F. Von Oettingen, Wilmington, Del.; P. N. Leech, Chicago; Chauncey D. Leake, San Francisco, and Wolfgang Heubner, Berlin, Germany.

Drs. D. E. Jackson and Helen L. Jackson, Cincinnati, presented a paper on "Experimental and Clinical Observations Regarding Angina Pectoris and Some Related Symptoms." Discussed by Drs. Lewis Gunther, Los Angeles; H. B. Haag, Richmond, Va.; Morris H. Nathanson, Minneapolis; George E. Wakerlin, Louisville, Ky.; Drew Luten, St. Louis, and D. E. Jackson, Cincinnati.

Drs. George R. Herrmann and George M. Decherd Jr., Galveston, Texas, presented a paper on "Further Studies on the Mechanism of Diuresis, with Especial Reference to the Action of Some Newer Diuretics." Discussed by Drs. Joseph M. Hayman Jr., Cleveland; Edward J. Stieglitz, Chicago; Benjamin Jablons, New York, and George R. Herrmann, Galveston, Texas.

Dr. Chauncey D. Leake, San Francisco, read the chairman's address, entitled "The Practical Pharmacology of Central Nervous System Depressant Drugs."

It was moved by Dr. Samuel M. Gordon, Chicago, seconded by Charles W. Dunn, Philadelphia, and carried, that the Section on Pharmacology and Therapeutics endorse the principle that discoverers of substances, simple or complex, possessing possible therapeutic uses communicate first with the Council on Pharmacy and Chemistry in order to determine whether or not they agree with the fundamental sound rules on nomenclature adopted by the Council before introducing coined names into the literature.

#### THURSDAY, MAY 14, MORNING

A joint meeting was held with the Section on Practice of Medicine. For a report of the proceedings, see the minutes of that section.

#### FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. N. C. Gilbert, Chicago; vice chairman, Dr. Russell L. Haden, Cleveland; secretary, Dr. Irving Wright, New York; delegate, Dr. Cary Eggleston, New York; alternate, Dr. N. M. Keith, Rochester, Minn.; executive committee, Drs. Carl H. Greene, New York, Chauncey D. Leake, San Francisco, and N. C. Gilbert, Chicago.

It was regularly moved, seconded and carried that the section extend a vote of thanks to Dr. Russell L. Haden, Cleveland, for his three years of work as secretary of the section.

Drs. Walter L. Palmer and Paul S. Woodall, Chicago, presented a paper on "Cinchophen—Is There a Safe Method of Administration?" Discussed by Drs. Manfred W. Comfort, Rochester, Minn.; D. R. Cimenko, Cold Spring Harbor, N. Y.; R. Garfield Snyder, New York; Chauncey D. Leake, San Francisco, and Walter L. Palmer, Chicago, Ill.

Dr. Milton Plotz, Brooklyn, read a paper on "Postprandial Insulin: Individualizing Time of Administration of Insulin." Discussed by Drs. Ralph H. Major, Kansas City, Mo., and Russell M. Wilder, Rochester, Minn.

Drs. John Russell Twiss and Carl H. Greene, New York, presented a paper on "Results of Dietary and Medical Treatment in Disease of the Gallbladder." Discussed by Drs. George B. Eusterman, Rochester, Minn.; Chauncey D. Leake, San Francisco, and John Russell Twiss, New York.

Drs. Norman A. David, Cincinnati, and George A. Emerson, Morgantown, W. Va., presented a paper on "The Present Status of Research and Teaching in Pharmacology." Discussed by Drs. H. B. Haag, Richmond, Va.; Charles W. Greene, Columbia, Mo.; Carl A. Dragstedt, Chicago; George E. Wakerlin, Louisville, Ky.; D. R. Cimenko, Cold Spring Harbor, N. Y.; Chauncey D. Leake, San Francisco, and George A. Emerson, Morgantown, W. Va.

Dr. Bayard T. Horton, Rochester, Minn., read a paper on "Hypersensitiveness to Cold, with Local and Systemic Manifestations of a Histamine-Like Character: Its Amenability to Treatment." Discussed by Drs. Chauncey D. Leake, San Francisco; Isidore Kinkelman, Elgin, Ill.; A. C. Tenney, Chicago; Morris H. Nathanson, Minneapolis, and Bayard T. Horton, Rochester, Minn.

Dr. Carl A. Dragstedt, Chicago, read a paper on "A Pharmacologic Study of the Toxemia Theory of Surgical Shock." Discussed by Drs. Chauncey D. Leake, San Francisco, and Carl A. Dragstedt, Chicago.

## SECTION ON PATHOLOGY AND PHYSIOLOGY

#### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Henry C. Sweany, Chicago.

The chairman appointed as a nominating committee, Drs. William Carpenter MacCarty, Rochester, Minn.; Harry J. Corper, Denver, and Israel Davidsohn, Chicago.

Dr. Henry C. Sweany, Chicago, read the chairman's address, entitled "Pathologic Interpretations of Roentgenologic Shadows in Pneumoconiosis."

Dr. Israel Davidsohn, Chicago, read a paper on "Serologic Diagnosis of Infectious Mononucleosis." Discussed by Drs. Richard H. Jaffé, Chicago; A. S. Giordano, South Bend, Ind., and Israel Davidsohn, Chicago.

Dr. Richard H. Jaffé, Chicago, read a paper on "Chronic Thyroiditis."

Dr. Arthur E. Hertzler, Halstead, Kan., read a paper on "End Results of Very Radical Thyroidectomies."

These two papers were discussed by Drs. Lindon Seed, Chicago; Leon Asher, Berne, Switzerland; Anton J. Carlson, Chicago; Richard H. Jaffé, Chicago, and Arthur E. Hertzler, Halstead, Kan.

Dr. Leon Asher, Berne, Switzerland, read a paper on "Nervous System and Internal Secretions." No discussion.

Drs. Harry J. Corper, Maurice L. Cohn and A. P. Damerow, Denver, presented a paper on "Specific Artificial Immunity in Tuberculosis." Discussed by Drs. Emil Bogen, Olive View, Calif.; Henry C. Sweany, Chicago, and Harry J. Corper, Denver.

Dr. Henry N. Harkins, Chicago, read a paper on "Surgical Shock in Peritonitis Due to Bile and to Liver Autolysis." Discussed by Drs. Thomas G. Orr, Kansas City, Mo.; Edward C. Mason, Oklahoma City; M. Pinson Neal, Columbia, Mo.; H. M. Trusler, Indianapolis; Anton J. Carlson, Chicago; Norman E. Freeman, Boston, and Henry N. Harkins, Chicago.

Dr. Edward J. Stieglitz, Chicago, read a paper on "The Blood Nitrite." Discussed by Drs. Anton J. Carlson, Chicago, and Edward J. Stieglitz, Chicago.

#### THURSDAY, MAY 14—AFTERNOON

The following papers were read as a symposium on "Vitamins":

Dr. C. G. King, Pittsburgh: "Chemistry of Vitamin C."

Dr. H. A. Mattill, Iowa City: "Chemistry of Vitamin A."

Dr. Richard J. Black, New York: "Chemistry of the Vitamin B Complex."

Dr. Charles E. Bills, Evansville, Ind.: "New Forms and Sources of Vitamin D."

Dr. S. B. Wolbach, Boston: "The Pathologic Changes Resulting from Vitamin Deficiencies."

Dr. John B. Youmans, Nashville, Tenn.: "The Present Status of Vitamin Deficiencies in Practice."

Dr. Anton J. Carlson, Chicago: "Physiology of Vitamins."

These seven papers were discussed by Drs. Arthur F. Abt, Chicago; Anton J. Carlson, Chicago, and S. B. Wolbach, Boston.

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman, Dr. W. E. Garrey, Nashville, Tenn.; vice chairman, Dr. R. R. Kracke, Emory University, Ga.; secretary, Dr. J. J. Moore, Chicago; delegate, Dr. D. J. Davis, Chicago; alternate, Dr. J. J. Moore, Chicago; executive committee, Drs. Elias P. Lyon, Minneapolis; Henry C. Sweany, Chicago, and W. E. Garrey, Nashville, Tenn.

Secretary Moore made a report for the committee that was appointed last year to meet with the committee from the American Society of Clinical Pathologists, as follows:

This committee was empowered to act for the certification of pathologists and reports issued by them.

during the year. A set of by-laws was formulated by this joint committee, which has been accepted by the advisory board of the Boards for Specialties. A preliminary meeting was held in Kansas City with the members of the board appointed by the American Society of Clinical Pathologists. At this preliminary meeting, the incorporation of the American Board of Pathology in Michigan was authorized.

Dr. A. H. Sanford, Rochester, Minn., was nominated temporary chairman, and Dr. Frank A. Hartman, Columbus, Ohio, temporary secretary-treasurer of the board.

It is hoped that the Board of Pathology will be giving examinations at the Atlantic City meeting of the American Medical Association, or probably it will be active enough to give an examination some place this fall.

On motion duly made, seconded and carried, it was voted to adopt the report of the committee as presented.

Dr. Gregory Schwartzman, New York, read a paper on "The Phenomenon of Local Tissue Reactivity to Bacterial Filtrates: The Role of Altered Vascular Response in Certain Human Diseases." Discussed by Dr. Gregory Schwartzman, New York.

Drs. Milton B. Cohen, Benjamin S. Kline and Anna May Young, Cleveland, presented a paper on "The Clinical Diagnosis of Periarthritis Nodosa." Discussed by Drs. Henry C. Sweany, Chicago, and Milton B. Cohen, Cleveland.

Dr. William Carpenter MacCarty, Rochester, Minn., read a paper on "Identification of the Cancer Cell." Discussed by Dr. William Carpenter MacCarty, Rochester, Minn.

Dr. James P. Simonds, Chicago, read a paper on "The Effects of Intravenous Injections of Salt Solution in Collapse Due to Mechanical Impounding of Blood in the Splanchnic Region." No discussion.

Dr. Samuel M. Feinberg, Chicago, read a paper on "Seasonal Hay Fever and Asthma Due to Molds." Discussed by Drs. Henry C. Sweany, Chicago; George R. Herrmann, Galveston, Texas, and Samuel M. Feinberg, Chicago.

Dr. Jack Clayton Norris, Atlanta, Ga., read a paper on "Syphilis of the Myocardium and Coronary Arteries." Discussed by Drs. James L. Dubrow, Des Moines, Iowa; George R. Herrmann, Galveston, Texas; Morris H. Nathanson, Minneapolis; Henry C. Sweany, Chicago, and Jack Clayton Norris, Atlanta, Ga.

Drs. Frank W. Hartman and Andrew H. Dowdy, Detroit, presented a paper on "The Physiologic Effects of Fever Therapy as Related to the Preparation and Various Sedatives Employed." Discussed by Dr. James L. Dubrow, Des Moines, Iowa.

## SECTION ON NERVOUS AND MENTAL DISEASES

### WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Hans H. F. Reese, Madison, Wis.

Dr. Walter Freeman, Washington, D. C., presented the following resolution:

WHEREAS, There is need for a wider and more equal distribution of facilities for the care and treatment of the mentally ill; and

WHEREAS, The standards of such care may be improved by the collection and study of data pertaining to mental hospital services in the United States; and

WHEREAS, The measures and facilities for training personnel in nervous and mental diseases are of very great importance in bringing about improved standards; and

WHEREAS, The joint cooperative committee has been organized for the conduct of a national survey of mental hospital services; and

WHEREAS, That committee has invited the Section on Nervous and Mental Diseases of the American Medical Association to designate two representatives of that section to serve with the committee; therefore be it

Resolved, That the House of Delegates of the American Medical Association approves the designation of two members of its Section on Nervous and Mental Diseases to serve as members of the cooperative committee for the survey of public mental hospital services in the United States.

On motion regularly made and seconded, the foregoing resolution was approved, to be transmitted to the House of Delegates.

Drs. J. Grafton Love and James W. Kernohan, Rochester, Minn., presented a paper on "Epidermoid Tumors of the Brain." Discussed by Drs. Ernest Sachs, St. Louis; R. Glen Spurling,

Louisville, Ky.; Joseph E. J. King, New York; Walter E. Dandy, Baltimore, and J. Grafton Love, Rochester, Minn.

Dr. Henry W. Newman, San Francisco, read a paper on "Encephalography with Ethylene." Discussed by Drs. John J. Keegan, Omaha; Mabel G. Masten, Madison, Wis.; J. Grafton Love, Rochester, Minn.; Temple Fay, Philadelphia, and Henry W. Newman, San Francisco.

Drs. R. Glen Spurling and Frank H. Mayfield, Louisville, Ky., presented a paper on "Neoplasms of the Spinal Cord: Report of a Series of Forty-Two Surgical Cases." Discussed by Drs. Percival Bailey, Chicago; Frank R. Teachenor, Kansas City, Mo., and R. Glen Spurling, Louisville, Ky.

Dr. Walter E. Dandy, Baltimore, read a paper on "Newer Aspects of Mènière's Disease: Diagnosis and Treatment." Discussed by Drs. Frank R. Teachenor, Kansas City, Mo.; Francis C. Grant, Philadelphia, and Walter E. Dandy, Baltimore.

Dr. Francis C. Grant, Philadelphia, read a paper on "Alcohol Injection in the Treatment of Major Trigeminal Neuralgia." Discussed by Drs. Walter E. Dandy, Baltimore; J. Grafton Love, Rochester, Minn.; Peter Bassoe, Chicago; Ernest Sachs, St. Louis; James Rudolph Jaeger, Denver; A. L. Skoog, Kansas City, Mo., and Francis C. Grant, Philadelphia.

Dr. Edgar A. Kahn, Ann Arbor, Mich., read a paper on "The Treatment of Encapsulated Brain Abscess: A Method Whereby the Wall Is Brought To or Above the Surface Preliminary to Drainage." Discussed by Drs. R. Glen Spurling, Louisville, Ky.; Joseph E. J. King, New York; Walter E. Dandy, Baltimore; Temple Fay, Philadelphia; James Rudolph Jaeger, Denver; Percival Bailey, Chicago, and Edgar A. Kahn, Ann Arbor, Mich.

### THURSDAY, MAY 14—MORNING

The following papers were read as a symposium on "The Action Potentials of the Brain."

Drs. Hallowell Davis and Pauline A. Davis, Boston: "I. In Normal Persons and in Normal States of Cerebral Activity."

Dr. George Kreezer, Vineland, N. J.: "II. In Certain Types of Mental Deficiency."

Drs. Frederic A. Gibbs, William G. Lennox and Erna L. Gibbs, Boston: "III. In Epilepsy: (1) Significance for Diagnosis and Localization; (2) Effect of Drugs and of Conditions Which Influence Seizures."

These three papers were discussed by Drs. L. E. Travis, Iowa City; George H. Bishop, St. Louis; Ernest A. Spiegel, Philadelphia; Temple Fay, Philadelphia; Hallowell Davis, Boston; George Kreezer, Vineland, N. J.; Frederic A. Gibbs, Boston, and William G. Lennox, Boston.

Dr. A. E. Bennett, Omaha, read a paper on "Fever Therapy in *Tuberculosis Dorsalis*: The Relief of Gastric Crises and Lightning Pains by the Use of the Kettering Hypertherm." Discussed by Drs. Franklin G. Ebaugh, Denver; Henry W. Woltman, Rochester, Minn., and A. E. Bennett, Omaha.

Drs. Clarke H. Barnacle, Franklin G. Ebaugh and Jack R. Ewalt, Denver, presented a paper on "A Comparative Study of Artificial Hyperpyrexia and Therapeutic Malaria in the Treatment of Dementia Paralytica: A Preliminary Report." Discussed by Drs. A. E. Bennett, Omaha; Paul A. O'Leary, Rochester, Minn.; Walter Freeman, Washington, D. C.; William Nelson, St. Louis; Hans H. F. Reese, Madison, Wis., and Clarke H. Barnacle, Denver.

### FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. Henry R. Viets, Boston; vice chairman, Dr. B. Landis Elliott, Kansas City, Mo.; secretary, Dr. Paul C. Bucy, Chicago; delegate, Dr. Tom B. Throckmorton, Des Moines; alternate, Dr. Edward Delehanty, Denver; executive committee: Drs. H. Douglas Singer, Chicago; Hans H. F. Reese, Madison, Wis.; Henry R. Viets, Boston.

Dr. Walter Freeman, Washington, D. C., made the following report, as representative of the section on the American Board of Psychiatry and Neurology:

Since the Atlantic City session of the American Medical Association in 1935 the American Board of Psychiatry and Neurology has held two meetings for the examination and certification of candidates. At the meeting in New York, Dec. 29 and 30, 1935, thirty-seven candidates were certified in psychiatry, nine candidates in neurology and thirty-two candidates in both psychiatry and neurology. At the meeting held in St. Louis, May 8 and 9, 1936, twenty-nine candidates were



certified in psychiatry, six candidates were certified in neurology and twenty-nine candidates were certified in both psychiatry and neurology.

Lists of the physicians certified have been published in the *Archives of Neurology and Psychiatry* and the *American Journal of Psychiatry*.

At the annual meeting in New York, Dec. 29, 1935, the following officers and directors were elected: president, Dr. H. Douglas Singer, Chicago; vice president, Dr. C. Macfie Campbell, Boston; secretary-treasurer, Dr. Walter Freeman, Washington, D. C.; Directors: Dr. Louis Casamajor, New York; Dr. Clarence O. Cheney, New York; Dr. Franklin G. Ebaugh, Denver; Dr. George W. Hall, Chicago; Dr. J. Allen Jackson, Danville, Pa.; Dr. Adolf Meyer, Baltimore; Dr. Lewis J. Pollock, Chicago; Dr. Edwin G. Zabriskie, New York; Dr. Lloyd H. Ziegler, Albany, N. Y.

The term of office of Dr. Lloyd H. Ziegler, nominee from the Section on Nervous and Mental Diseases to the American Board of Psychiatry and Neurology, has expired, and the nomination for his successor is in order.

A committee on graduate education has been appointed to study the facilities for postgraduate work in psychiatry and neurology.

Dr. Tom B. Throckmorton, Des Moines, Iowa, delegate, made his report and stated that the House of Delegates had acted favorably on the resolution referred to it by the section for the appointment of two representatives on the committee to work in conjunction with the United States Public Health Service in making a survey of public mental hospitals in the United States.

Dr. Lloyd H. Ziegler, Albany, N. Y., was chosen as a member of the American Board of Psychiatry and Neurology for a term of four years.

Drs. Franklin G. Ebaugh, Denver, and J. Allen Jackson, Danville, Pa., were chosen as members of the Joint Committee for the Study and Survey of Public Mental Hospitals in the United States.

Dr. Hans H. F. Reese, Madison, Wis., read the chairman's address, entitled "The History of Scalping and Its Clinical Aspects."

Dr. Charles H. Kimberly, Stockbridge, Mass., read a paper on "Psychoneurotic Depressions." Discussed by Drs. William Nelson, St. Louis, and Charles H. Kimberly, Stockbridge, Mass.

Dr. Charles Bradley, East Providence, R. I., read a paper on "A Children's Hospital for Neurologic and Behavior Disorders: Five Years' Experience at the Emma Pendleton Bradley Home." Discussed by Drs. William G. Lennox, Boston; William Nelson, St. Louis, and Charles Bradley, East Providence, R. I.

Dr. Homer P. Rush, Portland, Ore., read a paper on "Interdependence Between the Visceral Nervous System and the Endocrine System." Discussed by Dr. T. Homer Coffen, Portland, Ore.

Dr. J. M. Nielsen, Los Angeles, read a paper on "Unilateral Cerebral Dominance as Related to Mind-Blindness: The Minimal Lesion Capable of Causing Visual Agnosia for Objects." Discussed by Drs. A. L. Skoog, Kansas City, Mo.; William Nelson, St. Louis; Hans H. F. Reese, Madison, Wis., and J. M. Nielsen, Los Angeles.

Drs. Louis L. Tureen, Sidney I. Schwab and Joseph J. Gitt, St. Louis, presented a paper on "Toxic Focal Lesions in the Central Nervous System." Discussed by Drs. Peter Bassoe, Chicago; Walter Freeman, Washington, D. C., and Louis L. Tureen, St. Louis.

## SECTION ON DERMATOLOGY AND SYPHILOLOGY

### WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9:10 by the chairman, Dr. Harry R. Foerster, Milwaukee.

Dr. C. W. Finnerud, Chicago, reported for the Scientific Exhibit Committee a balance of \$145.93 and announced that the proposed exhibit for the next annual session was one on diseases of the mouth. The chair appointed an auditing committee consisting of Dr. Howard T. Phillips, Wheeling, W. Va., and Dr. Michael Ebert, Chicago, to audit the account of the Scientific Exhibit Committee.

Dr. C. Guy Lane, Boston, read the report of the American Board of Dermatology.

Dr. Harold N. Cole, Cleveland, reported for the Committee on the International Congress at Budapest, at which an International Society was formed, which has already compiled a directory of dermatologists of the entire world and is now working on an illustrated atlas for a universal system of terms for use in dermatology. Dr. Howard Fox, New York, supplemented Dr. Cole's report with a brief explanation of the objects of the International Dermatological Society.

Resolutions of sympathy were adopted on the death of Dr. Josef Jadassohn (on motion of Dr. John Eric Dalton, Indianapolis) and Dr. Jeffrey C. Michael, Houston, Texas (on motion of Dr. Howard Morrow, San Francisco) and the secretary was instructed to transmit them to the families of the deceased.

Dr. Harry R. Foerster, Milwaukee, read the chairman's address, entitled "Some Observations on Industrial Dermatology."

Drs. Herbert S. Alden and Jack W. Jones, Atlanta, Ga., presented a paper on "A Modification of Therapy with Gold Compounds in Lupus Erythematosus." Discussed by Drs. James K. Howles, New Orleans; M. E. Obermayer, Chicago; Martin Engman Jr., St. Louis; John Howard King, Nashville, Tenn.; D. W. Goldstein, Fort Smith, Ark.; Wiley M. Sams, Miami, Fla.; Herbert Rattner, Chicago, and Herbert S. Alden, Atlanta, Ga.

Dr. Hamilton Montgomery, Rochester, Minn., read a paper on "Histopathology of Various Types of Cutaneous Tuberculosis." Discussed by Drs. Duncan O. Poth, San Antonio, Texas; Marion B. Sulzberger, New York; Richard L. Sutton Jr., Kansas City, Mo.; C. W. Finnerud, Chicago; Herbert S. Alden, Atlanta, Ga.; Donald M. Pillsbury, Philadelphia, and Hamilton Montgomery, Rochester, Minn.

Drs. James W. Jordon and Earl D. Osborne, Buffalo, presented a paper on "Besnier-Boeck's Disease." Discussed by Drs. J. P. Guequierre, Philadelphia; Marion B. Sulzberger, New York; Moses Scholtz, Los Angeles, and James W. Jordon, Buffalo.

Drs. Fred Wise, Charles R. Rein and David L. Satenstein, New York, presented a paper on "Lichen Ruber Moniliformis: Report of a Hitherto Undescribed Variety of a Rare Dermatitis." Discussed by Drs. F. M. Jacob, Pittsburgh; Hamilton Montgomery, Rochester, Minn.; L. H. Winer, Minneapolis; Fred D. Weidman, Philadelphia, and Charles R. Rein, New York.

Drs. James T. Wayson, Honolulu, H. I., and Fred D. Weidman, Philadelphia, presented a paper on "Aleukemic Reticulosis: An Additional Member of the So-Called Cutaneous Lymphoblastomas."

Dr. Francis W. Lynch, St. Paul, read a paper on "Cutaneous Lesions Associated with Monocytic Leukemia and Reticulo-Endotheliosis."

These two papers were discussed by A. B. Loveman, Louisville, Ky.; Arthur W. Stillians, Chicago; Hamilton Montgomery, Rochester, Minn.; D. W. Goldstein, Fort Smith, Ark.; M. G. Bohrod, Peoria, Ill.; Fred D. Weidman, Philadelphia, and Francis W. Lynch, St. Paul.

### THURSDAY, MAY 14—MORNING

The chairman appointed Dr. Howard Morrow, San Francisco, to fill the vacancy on the executive committee caused by the death of Dr. Jeffrey C. Michael, Houston, Texas.

Dr. Michael Ebert, Chicago, reported that the auditing committee appointed to audit the accounts of the Scientific Exhibit Committee had found them correct.

Dr. Marion B. Sulzberger, New York, presented the following report for the Committee on Industrial Dermatoses:

Your committee met yesterday under the chairmanship of Dr. C. Guy Lane, Boston. Your committee recommends that a central clearing house be established for the recording and dissemination of information on industrial dermatoses. It recommends that its studies be continued, in cooperation with the Section on Preventive and Industrial Medicine and Public Health with the United States Public Health Service and with the American Dermatological Association, for the purpose of establishing a cooperative approach to the problems of industrial skin diseases. It further recommends that the committee

be empowered to appoint local subcommittees in various states or districts to gather information and to report operations to this central section committee.

The report was adopted on motion of Dr. C. W. Finnerud, Chicago, regularly seconded and carried.

Drs. Eugene A. Hand and Udo J. Wile, Ann Arbor, Mich., presented a paper on "The Treatment of Lip Cancer: A Clinical Survey of Four Hundred Cases Treated by Different Methods." Discussed by Drs. Everett S. Lain, Oklahoma City; Richard L. Sutton Sr., Kansas City, Mo.; James F. Percy, Los Angeles; Merlin T.-R. Maynard, San Jose, Calif.; H. J. Templeton, Oakland, Calif.; Harry P. Jacobson, Los Angeles; Everett C. Fox, Dallas, Texas; C. F. Lehmann, San Antonio, Texas, and Udo J. Wile, Ann Arbor, Mich.

Drs. Adolph Rostenberg Jr. and Marion B. Sulzberger, New York, presented a paper on "Some Patch Test Observations Based on Five Years' Experience in More Than Nine Hundred Patients with More Than Ten Thousand Tests." Discussed by Drs. M. E. Obermayer, Chicago; S. W. Becker, Chicago; Paul A. O'Leary, Rochester, Minn.; Adolph Rostenberg Jr., New York, and Marion B. Sulzberger, New York.

Drs. Donald M. Pillsbury and Thomas H. Sternberg, Philadelphia, presented a paper on "The Relation of Diet to Skin Infection: A Study of the Influence of High and Low Carbohydrate and High Fat Intakes and Starvation on Experimental Pyogenic Infections in Dogs." Discussed by Drs. John F. Madden, St. Paul; Arthur Schoch, Dallas, Texas; Theodore Cornbleet, Chicago; Victor E. Levine, Omaha; Moses Scholtz, Los Angeles, and Donald M. Pillsbury, Philadelphia.

Drs. E. William Abramowitz, New York, and Maurice H. Noun, Des Moines, Iowa, presented a paper on "Fixed" Drug Eruptions." Discussed by Drs. Marque O. Nelson, Tulsa, Okla., and Maurice H. Noun, Des Moines, Iowa.

Dr. Carl W. Laymon, Minneapolis, read a paper on "Extra-cellular Cholesterinosis." Discussed by Drs. C. Guy Lane, Boston; Hamilton Montgomery, Rochester, Minn., and Carl W. Laymon, Minneapolis.

Dr. James Herbert Mitchell, Chicago, read a paper on "Streptococcic Dermatoses of the Ears." Discussed by Drs. Clinton W. Lane, St. Louis; S. W. Becker, Chicago; Anthony C. Cipollaro, New York; Samuel Ayres Jr., Los Angeles; D. T. Gandy, Houston, Texas; Moses Scholtz, Los Angeles, and James Herbert Mitchell, Chicago.

Dr. Theodore Cornbleet, Chicago, read a paper on "Vitamin C and Pigment." Discussed by Drs. S. W. Becker, Chicago; Donald M. Pillsbury, Philadelphia, and Theodore Cornbleet, Chicago.

#### FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. Paul A. O'Leary, Rochester, Minn.; vice chairman, Dr. Charles C. Dennie, Kansas City, Mo.; secretary, Dr. Bedford Shelmire, Dallas, Texas; delegate, Dr. Clyde L. Cummer, Cleveland; alternate, Dr. Harold N. Cole, Cleveland; member of the American Board of Dermatology for four consecutive one-year terms, Dr. C. Guy Lane, Boston; chairman, Scientific Exhibit Committee, Dr. Clark W. Finnerud, Chicago; executive committee, Dr. Howard Morrow, San Francisco; Dr. Harry R. Foerster, Milwaukee; Dr. Paul A. O'Leary, Rochester, Minn.

Drs. J. J. Eller and K. A. Kazanjian, New York, presented a paper on "Clinical Evaluation of a New Trichophyton Extract: 'Dermatomycol.'" Discussed by Drs. Harry P. Jacobson, Los Angeles; Marion B. Sulzberger, New York; Joseph Grindon Jr., St. Louis; Norman Epstein, San Francisco; W. F. Spiller, Galveston, Texas, and J. J. Eller, New York.

Dr. E. W. Netherton, Cleveland, read a paper on "Arsphenamine Resistant Early Syphilis in Two Instances of Conjugal Infection." Discussed by Drs. John Eric Dalton, Indianapolis; Arthur W. Stillians, Chicago; Harry M. Robinson, Baltimore, and E. W. Netherton, Cleveland.

Drs. Max S. Wien and Minnie Oboler Perlstein, Chicago, presented a paper on "Ulcerative Lesions of the Skin in Lymphogranuloma Inguinale." Discussed by Drs. C. C. Tomlinson, Omaha; Harry M. Robinson, Baltimore; Samuel Goldblatt, Cincinnati; Paul A. O'Leary, Rochester, Minn.; Andrew L. Glaze, Birmingham, Ala.; Marion B. Sulzberger, New York, and Max S. Wien, Chicago.

Dr. R. A. Vonderlehr, Washington, D. C., read a paper on "Untreated Syphilis in the Male Negro: A Comparative Study of Treated and Untreated Cases." Discussed by Drs. Charles

C. Dennie, Kansas City, Mo.; Harry M. Robinson, Baltimore; Arthur G. Schoch, Dallas, Texas; James K. Howles, New Orleans, and R. A. Vonderlehr, Washington, D. C.

Drs. J. R. Driver, George W. Binkley and Maurice Sullivan, Cleveland, presented a paper on "Cod Liver Oil Ointments in the Treatment of Indolent Ulcers." Discussed by Drs. Everett C. Fox, Dallas, Texas; Paul Foster, Los Angeles; Harry P. Jacobson, Los Angeles; Adolph Rostenberg Jr., New York; Merlin T.-R. Maynard, San Jose, Calif.; D. W. Goldstein, Fort Smith, Ark.; Fred D. Weidman, Philadelphia; John Downing, Boston; Norman Epstein, San Francisco; Everett Seale, Houston, Texas; J. J. Eller, New York, and J. R. Driver, Cleveland.

On behalf of the section the chairman extended the thanks of the members for the hospitality and arrangements provided by the Kansas City members. There followed the induction of officers, after which the meeting adjourned.

### SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

#### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. R. R. Sayers, Washington, D. C.

The chairman announced the appointment of Drs. J. N. Baker, Montgomery, Ala., and Irl C. Riggan, Richmond, Va., to the executive committee to take the places of Drs. Wilson G. Smillie, Boston, and Robert H. Riley, Baltimore, absent.

Dr. R. R. Sayers, Washington, D. C., read the chairman's address, entitled "Industrial Hygiene Problems in the United States."

Dr. George H. Gehrmann, Wilmington, Del., read a paper on "Papilloma and Carcinoma of the Urinary Bladder in Dye Workers." Discussed by Drs. Victor D. Washburn, Wilmington, Del.; J. N. Baker, Montgomery, Ala.; W. F. von Oettingen, Wilmington, Del., and George H. Gehrmann, Wilmington, Del.

Drs. W. C. Dreessen and R. R. Jones, Washington, D. C., presented a paper on "Anthracosilicosis." Discussed by Drs. R. R. Sayers, Washington, D. C.; R. R. Jones, Washington, D. C., and W. C. Dreessen, Washington, D. C.

Dr. Henry Field Smyth, Philadelphia, read a paper on "Safe Practices in the Industrial Use of Carbon Tetrachloride." Discussed by Drs. Paul A. Davis, Akron, Ohio; W. F. von Oettingen, Wilmington, Del.; W. J. McConnell, New York, and Henry Field Smyth, Philadelphia.

Drs. H. H. Schrenk and W. P. Yant, Pittsburgh, presented a paper on "A New Procedure for the Control of Benzene Poisoning." Discussed by Drs. Henry Field Smyth, Philadelphia; Paul A. Davis, Akron, Ohio, and H. H. Schrenk, Pittsburgh.

#### THURSDAY, MAY 14—AFTERNOON

Dr. J. P. Leake, Washington, D. C., read a paper on "Poliomyelitis: Present Knowledge and Its Bearing on Control." Discussed by Drs. James D. Trask, New Haven, Conn.; Sidney D. Kramer, Brooklyn; Paul H. Harmon, Chicago, and J. P. Leake, Washington, D. C.

Dr. Theodore C. Hempelmann, St. Louis, read a paper on "Immediate Treatment and After-Care of Poliomyelitis Patients." Discussed by Drs. A. G. Bower, Los Angeles; Paul H. Harmon, Chicago, and Theodore C. Hempelmann, St. Louis.

Dr. V. H. Bassett, Savannah, Ga., read a paper on "Rabies and What to Do for the Person Bitten." Discussed by Drs. Edwin H. Schorer, Kansas City, Mo.; J. P. Leake, Washington, D. C.; Thurman B. Rice, Indianapolis, and V. H. Bassett, Savannah, Ga.

Drs. A. E. Keller, Crit Pharris and W. H. Gaub, Nashville, Tenn., presented a paper on "The Opsonocytaphagic, Allergic and Agglutination Reactions in the Diagnosis of Undulant Fever." Discussed by Drs. W. S. Leathers, Nashville, Tenn.; J. N. Baker, Montgomery, Ala., and John B. Youmans, Nashville, Tenn.

Drs. T. H. D. Griffiths and Henry Hanson, Jacksonville, Fla., presented a paper on "Significance of an Epidemic of Dengue." Discussed by Drs. V. H. Bassett, Savannah, Ga., and T. H. D. Griffiths, Jacksonville, Fla.

Mr. O. C. Durham, Chicago, read a paper on "The Evaluation of the Ragweed Hay Fever Resort Areas of North America." Discussed by Dr. Warren T. Vaughan, Richmond, Va., and Mr. O. C. Durham, Chicago.

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman, Dr. L. D. Bristol, New York; vice chairman, Dr. Joseph F. Bredeck, St. Louis; secretary, Dr. Irl C. Riggan, Richmond, Va.; executive committee: Dr. Robert H. Riley, Baltimore; Dr. R. R. Sayers, Washington, D. C., and Dr. L. D. Bristol, New York; delegate, Dr. Stanley H. Osborn, Hartford, Conn.

Dr. Stanley H. Osborn, Hartford, Conn., made his report as delegate.

On motion made by Dr. Stanley H. Osborn, Hartford, Conn., seconded by Dr. E. G. Brown, Topeka, Kan., it was voted that the incoming chairman of the section appoint a committee on accident control and safety to study the various medical aspects of accident control and make recommendations to the next annual meeting, with the suggestion that a resolution thereupon be presented to the House of Delegates through the section delegate.

Dr. Joseph F. Bredeck, St. Louis, read a paper on "What Service Does a Health Department Render to the Practicing Physician?" Discussed by Drs. Stanley H. Osborn, Hartford, Conn., and Joseph F. Bredeck, St. Louis.

Dr. E. G. Brown, Topeka, Kan., read a paper on "The Functions of a State Health Department." Discussed by Drs. Walter L. Bierring, Des Moines, Iowa, and E. G. Brown, Topeka, Kan.

Dr. W. W. Bauer, Chicago, read a paper on "The Physician's Place in the Public Health Program." Discussed by Drs. George M. Lyon, Huntington, W. Va.; Stanley H. Osborn, Hartford, Conn., and W. W. Bauer, Chicago.

Dr. L. D. Bristol, New York, read a paper on "Medical Aspects of Accident Control." Discussed by Drs. John H. Ogilvie, Kansas City, Mo.; Louis J. Hirschman, Detroit; Stanley H. Osborn, Hartford, Conn., and L. D. Bristol, New York.

Dr. H. T. Dean, Washington, D. C., read a paper on "Chronic Endemic Dental Fluorosis." Discussed by Dr. Carl F. Jordan, Des Moines, Iowa.

#### SECTION ON UROLOGY

##### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. John H. Morrissey, New York.

Drs. George H. Ewell, Madison, Wis., and Charles R. Marquardt and James C. Sargent, Milwaukee, presented a paper on "Hydrocele: Its Treatment by the Injection Method." Discussed by Drs. Nelse F. Ockerblad, Kansas City, Mo., and H. W. E. Walther, New Orleans.

Dr. T. D. Moore, Memphis, Tenn., read a paper on "Ureteropelvic Obstruction of the Noncalculous Type in Hydronephrosis." Discussed by Drs. Roy B. Henline, New York; Neil S. Moore, St. Louis; John R. Caulk, St. Louis; Waltman Walters, Rochester, Minn.; Frederic E. B. Foley, St. Paul; Myron J. Hahn, Boston, and T. D. Moore, Memphis, Tenn.

Dr. Charles C. Higgins, Cleveland, read a paper on "Present Status of Dietary Regimens in Treatment of Urinary Calculi."

Dr. Anson L. Clark, Oklahoma City, read a paper on "Present Status of Dietary Regimens in Urinary Infections."

These two papers were discussed by Drs. William F. Braasch, Rochester, Minn.; Richard Chute, Boston; Charles C. Higgins, Cleveland; John K. Ormond, Detroit, and Anson L. Clark, Oklahoma City.

Dr. Walter G. Maddock, Ann Arbor, Mich., read a paper on "Water Balance in Surgical Patients." Discussed by Drs. Leonard G. Rowntree, Philadelphia; A. J. Scholl, Los Angeles, and Walter G. Maddock, Ann Arbor, Mich.

Dr. D. K. Rose, St. Louis, read a paper on "The Present Status of Cystometry." Discussed by Drs. Lloyd G. Lewis, Baltimore; A. Lloyd Stockwell, Kansas City, Mo.; Richard Chute, Boston, and D. K. Rose, St. Louis.

##### THURSDAY, MAY 14—AFTERNOON

Dr. Frederic E. B. Foley, St. Paul, read a paper on "Aseptic Ureterosigmoidostomy." Discussed by Nelse F. Ockerblad, Kansas City, Mo.

Dr. John H. Morrissey, New York, read the chairman's address.

Dr. C. A. Owens, Omaha, read a paper on "The Value of Fever Therapy in the Treatment of Gonorrhea."

These two papers were discussed by Drs. L. G. Stuhler, Rochester, Minn.; John K. Ormond, Detroit; Anson L. Clark, Oklahoma City; O. A. Nelson, Seattle; H. L. Kretschmer, Chicago, and C. A. Owens, Omaha.

Dr. Gershom J. Thompson, Rochester, Minn., read a paper on "Transurethral Surgery: Changing Conceptions During the Past Five Years."

Dr. N. G. Alcock, Iowa City, read a paper on "Results of Transurethral Prostatic Resection."

These two papers were discussed by Drs. George R. Livermore, Memphis, Tenn.; H. L. Kretschmer, Chicago; William J. Engel, Cleveland; Louis M. Orr Jr., Orlando, Fla.; A. G. Fleischman, Des Moines, Iowa; John F. Patton, St. Louis; Otto J. Wilhelmi, St. Louis; Hermon C. Bumpus Jr., Pasadena, Calif.; Charles J. McDevitt, Cincinnati; Gershom J. Thompson, Rochester, Minn., and N. G. Alcock, Iowa City.

Dr. Vincent J. O'Connor, Chicago, read a paper on "Intraprostatic Injection: An Experimental Study by Vincent O'Connor and Robert L. Ladd." Discussed by Drs. Earl Ewert, Chicago, and Vincent J. O'Connor, Chicago.

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman, Henry W. E. Walther, New Orleans; vice chairman, Nelse F. Ockerblad, Kansas City, Mo.; secretary, William P. Herbst Jr., Washington, D. C.; delegate, Hermon C. Bumpus Jr., Pasadena, Calif.; executive committee, John H. Morrissey, New York; Stanley R. Woodruff, Jersey City, N. J., and Henry W. E. Walther, New Orleans.

The following papers were read as a symposium on "Sterility."

Dr. Richard Chute, Boston: "Endocrine Factors in Sterility." Discussed by Drs. Moses Swick, New York, and Richard Chute, Boston.

Dr. Samuel R. Meaker, Boston: "The Gynecologic Aspect of Human Sterility."

Dr. Robert S. Hotchkiss, New York: "Methods of Sperm Analysis, with the Valuation of Therapeutic Procedures."

Dr. Francis R. Hagner, Washington, D. C.: "Plastic Operative Treatment for Relief of Sterility in the Male."

These three papers were discussed by Drs. Victor D. Lespinasse, Chicago; Lawrence R. Wharton, Baltimore; Miley B. Wesson, San Francisco; J. H. Turner, Houston, Texas; Samuel R. Meaker, Boston; Robert S. Hotchkiss, New York, and Francis R. Hagner, Washington, D. C.

Dr. Jesse Ullman Reaves, Mobile, Ala., read a paper on "Granuloma Inguinale vs. Lymphogranuloma Inguinale." Discussed by Drs. H. T. Hayes, Houston, Texas; J. H. Turner, Houston, Texas; Max S. Wien, Chicago; Paul R. Stalnaker, Houston, Texas; Victor D. Lespinasse, Chicago, and Jesse Ullman Reaves, Mobile, Ala.

Dr. M. A. Nicholson, Duluth, Minn., read a paper on "Analysis of Indications for and Results of Cystoscopic Examination." Discussed by Dr. R. W. Barnes, Los Angeles.

#### SECTION ON ORTHOPEDIC SURGERY

##### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Arthur T. Legg, Boston.

Dr. J. Albert Key, St. Louis, read a paper on "Results Obtained by the Subcutaneous Fixation of Fractures of the Neck of the Femur." Discussed by Drs. Edwin W. Ryerson, Chicago; Fred Knowles, Fort Dodge, Iowa; Fred J. Gaenslen, Milwaukee; Kellogg Speed, Chicago, and J. Albert Key, St. Louis.

Dr. Joseph I. Mitchell, Memphis, Tenn., read a paper on "Fractures of the Neck of the Femur in Children." Discussed by Drs. Paul C. Colonna, New York; S. L. Haas, San Francisco; Ralph G. Carothers, Cincinnati, and Joseph I. Mitchell, Memphis, Tenn.

Dr. Paul B. Magnuson, Chicago, read a paper on "The Evaluation of the Various Methods of Treatment Advanced for Fractures of the Neck of the Femur." Discussed by Drs.

Frank D. Dickson, Kansas City, Mo.; Willis C. Campbell, Memphis, Tenn.; C. Fred Ferciot, Lincoln, Neb.; J. Albert Key, St. Louis; Laurence Jones, Kansas City, Mo., and Paul Magnuson, Chicago.

Dr. Albert B. Ferguson, New York, read a paper on "A New Lateral Roentgenogram of the Femoral Neck." Discussed by Drs. Fred J. Gaenslen, Milwaukee; S. Perry Rogers, Chicago, and Albert B. Ferguson, New York.

Dr. Arthur T. Legg, Boston, read the chairman's address, entitled "The Early Orthopedic Treatment of Poliomyelitis."

Dr. Fred H. Albee, New York, read a paper on "Massive Resection and Bone Graft Replacement in Sarcoma of the Long Bone." Discussed by Dr. Arthur Steindler, Iowa City.

#### THURSDAY, MAY 14—AFTERNOON

Dr. Marcus H. Hobart, Evanston, Ill., read a paper on "Osteomyelitis at Cook County Hospital, with an Appraisal of Orr's Treatment." Discussed by Drs. R. J. Dittrich, Fort Scott, Kan.; Jacob Kulowski, St. Joseph, Mo.; J. E. M. Thomson, Lincoln, Neb.; Edwin W. Ryerson, Chicago; John Prentiss Lord, Omaha, and Marcus H. Hobart, Evanston, Ill.

Dr. Carl E. Badgley, Ann Arbor, Mich., read a paper on "Osteomyelitis of the Ilium, Acute and Chronic." Discussed by Drs. W. B. Carrell, Dallas, Texas, and Carl E. Badgley, Ann Arbor, Mich.

Dr. Guy A. Caldwell, Shreveport, La., read a paper on "Osteomyelitis of the Spine." Discussed by Dr. M. E. Pusitz, Topeka, Kan.

Dr. Robert C. Robertson, Chattanooga, Tenn., read a paper on "Acute Hematogenous Osteomyelitis: An Analysis of Seventy-Five Cases." Discussed by Drs. Edwin W. Ryerson, Chicago; Joseph I. Mitchel, Memphis, Tenn.; Robert L. Preston, New York; James B. Weaver, Kansas City, Mo., and Robert C. Robertson, Chattanooga, Tenn.

Drs. John C. Wilson and Francis M. McKeever, Los Angeles, presented a paper on "Growth Changes in Bone as a Result of Osteomyelitis in Children." Discussed by Dr. D. B. Phemister, Chicago.

Dr. Sylvan L. Haas, San Francisco, read a paper on "Late Infection Following the Use of Wire and Pins in Bone." Discussed by Drs. Roger Anderson, Seattle; W. K. West, Oklahoma City, and Sylvan L. Haas, San Francisco.

#### FRIDAY, MAY 15—AFTERNOON

The following officers were elected: chairman, Dr. Fremont A. Chandler, Chicago; vice chairman, Dr. John Dunlop, Pasadena, Calif.; secretary, Dr. Robert V. Funsten, University, Va.; delegate, Dr. Henry W. Meyerding, Rochester, Minn.; alternates: Drs. Roland Hammond, Providence, R. I.; James S. Speed, Memphis, Tenn.; executive committee: Drs. Robert D. Schrock, Omaha; Arthur T. Legg, Boston; Fremont A. Chandler, Chicago.

Dr. Fremont A. Chandler, Chicago, was continued as a member of the American Board of Orthopedic Surgery.

The report of the secretary was given by Dr. Robert V. Funsten and was adopted.

Dr. Joseph S. Barr, Boston, read a paper on "Tuberculosis of the Hip in Children." Discussed by Drs. Arthur Steindler, Iowa City; John C. Wilson, Los Angeles; Halford Hallock, New York, and Joseph S. Barr, Boston.

Dr. Melvin S. Henderson, Rochester, Minn., read a paper on "The Massive Bone Graft." Discussed by Drs. Oscar L. Miller, Charlotte, N. C.; Fremont A. Chandler, Chicago; W. K. West, Oklahoma City, and Melvin S. Henderson, Rochester, Minn.

Drs. Samuel Kleinberg and Joseph Buchman, New York, presented a paper on "The Operative versus the Manipulative Treatment of Slipped Femoral Epiphysis, with a Description of a Curative Operation." Discussed by Dr. Samuel Kleinberg, New York.

Drs. Louis B. Laplace and Jesse T. Nicholson, Philadelphia, presented a paper on "The Physiologic Effects of the Correction of Faulty Posture." Discussed by Dr. John G. Kuhns, Boston.

Dr. Arthur G. Davis, Erie, Pa., read a paper on "A Conservative Treatment of Habitual Dislocations of the Shoulder." Discussed by Drs. Edson B. Fowler, Evanston, Ill., and Arthur G. Davis, Erie, Pa.

## SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Ernest H. Gaither, Baltimore.

The chairman read the following letter from Dr. Anthony Bassler, New York:

Nov. 20, 1935.

At the next meeting of the section, please submit the following. After its adoption kindly send me the name of the person who is selected.

A suitable resolution would be:

The International Society of Gastro-Enterology is forming an American committee to select and communicate with those who are to be the members from this country. The committee is being made up by representatives of the various gastro-enterologic organizations in the United States. Among these is the Section on Gastro-Enterology and Proctology of the American Medical Association. Thus far those on the committee request the section to select and appoint a representative to this committee, if possible one who is not a member of other gastro-enterologic organizations.

On motion made by Dr. Louis J. Hirschman, Detroit, seconded by Dr. Descum C. McKenney, Buffalo, it was voted that for clarification the matter be referred through the section delegate, Dr. Curtice Rosser, Dallas, Texas, to the House of Delegates of the American Medical Association, for information and report back on Friday morning, May 15, since the invitation was issued to a constituent part of the American Medical Association.

Dr. Descum C. McKenney, Buffalo, read a paper on "Multiple Polyposis of Colon, Familial Factor and Malignant Tendency." Discussed by Drs. John J. Corbett, Detroit; Thomas E. Jones, Cleveland, and Descum C. McKenney, Buffalo.

Drs. Charles W. Mayo and E. G. Wakefield, Rochester, Minn., presented a paper on "Disseminated Polyposis of the Colon." Discussed by Drs. Frank H. Lahey, Boston; Walter A. Fansler, Minneapolis; H. W. Soper, St. Louis, and E. G. Wakefield, Rochester, Minn.

Dr. H. W. Soper, St. Louis, read a paper on "Clinical Significance of Indicanuria." Discussed by Drs. A. L. Levin, New Orleans; H. W. Soper, St. Louis, and E. G. Wakefield, Rochester, Minn.

Dr. Nelson G. Russell, Buffalo, read a paper on "The Relation of Gastro-Enterology to General Medicine." Discussed by Drs. George B. Eustermann, Rochester, Minn., and Nelson G. Russell, Buffalo.

Drs. Russell S. Boles and Jefferson H. Clark, Philadelphia, presented a paper on "Alcohol and Cirrhosis of the Liver: Clinical and Pathologic Considerations." Discussed by Drs. Leonard G. Rowntree, Philadelphia; Harry L. Bockus, Philadelphia, and Russell S. Boles, Philadelphia.

Drs. David R. Meranze and Maurice M. Rothman, Philadelphia, presented a paper on "The Relationship of the Plasma Phosphatase Value in the Blood in the Differential Diagnosis of Obstructive and Hepatocellular Jaundice." Discussed by Drs. Leonard G. Rowntree, Philadelphia; J. Russell Twiss, New York, and Maurice M. Rothman, Philadelphia.

Drs. Harry L. Bockus and Henry J. Tumen, Philadelphia, presented a paper on "Serum Proteins in Hepatic Diseases." Discussed by Dr. Manfred W. Comfort, Rochester, Minn.

#### THURSDAY, MAY 14—MORNING

Dr. Ernest H. Gaither, Baltimore, read the chairman's address, entitled "Recent Advances in Gastro-Enterology."

Drs. Rudolf Schindler, Marie Ortmayer and John F. Renshaw, Chicago, presented a paper on "Chronic Gastritis." Discussed by Drs. William Carpenter MacCarty, Rochester, Minn.; Leon Bloch, Chicago; George B. Eusterman, Rochester, Minn., and Rudolf Schindler, Chicago.

Dr. Warren T. Vaughan, Richmond, Va., read a paper on "The Leukopenic Index as a Diagnostic Method in the Study of Food Allergy." Discussed by Drs. L. P. Gay, St. Louis; Herbert J. Rinkel, Kansas City, Mo.; Albert H. Rowe, Oakland, Calif., and Warren T. Vaughan, Richmond, Va.

Drs. C. C. Tucker and C. A. Hellwig, Wichita, Kan., presented a paper on "The Etiology of Pruritus Ani: Clinical and Histologic Manifestations in Forty-Three Cases." Discussed by Drs. Harry E. Bacon, Philadelphia; Curtice Rosser, Dallas, Texas; Hamilton Montgomery, Rochester, Minn.; Louis J. Hirschman, Detroit; Victor C. Tucker, San Antonio, Texas; G. S. Hanes, Louisville, Ky., and C. C. Tucker, Wichita, Kan.

Dr. Marion C. Pruitt, Atlanta, Ga., read a paper on "The Surgical Treatment of Pruritus Ani." Discussed by Drs. Harvey B. Stone, Baltimore; Louis J. Hirschman, Detroit; G. S. Hanes, Louisville, Ky., and Marion C. Pruitt, Atlanta.

Dr. George B. Eusterman, Rochester, Minn., read a paper on "The Clinical Significance of Negative Roentgen Examinations in Patients with Chronic Dyspepsia." Discussed by Drs. Edward H. Skinner, Kansas City, Mo., Nelson G. Russell, Buffalo, and Rudolf Schindler, Chicago.

#### FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. Louis A. Buie, Rochester, Minn.; vice chairman, Dr. Harry L. Bockus, Philadelphia; secretary, Dr. A. H. Aaron, Buffalo; executive committee: Dr. Walter A. Fansler, Minneapolis; Dr. Ernest H. Gaither, Baltimore, and Dr. Louis A. Buie, Rochester, Minn. Delegate, Dr. Curtice Rosser, Dallas, Texas; alternate, Dr. Frank G. Runyeon, Reading, Pa.; chairman of Committee on Section Exhibit, Dr. J. Arnold Bagen, Rochester, Minn.

Dr. Curtice Rosser, Dallas, Texas, made his report as delegate to the House of Delegates. On motion made by Dr. Louis A. Buie, Rochester, Minn., seconded by Dr. Bernard Sachs, Omaha, it was voted to accept the report.

On motion made by Dr. Curtice Rosser, Dallas, seconded by Dr. Sara M. Jordan, Boston, the following resolution was adopted:

WHEREAS, The International Society of Gastro-Enterology is forming an American committee to select and communicate with those who are to be the members from this country, and this committee is being made up by representatives of the various gastro-enterologic organizations in the United States, among these being the Section on Gastro-Enterology and Proctology of the American Medical Association, and those on the committee having requested the section to select and appoint a representative to this committee; it is hereby

Resolved, That this section, through its present chairman, appoint such a representative.

Dr. Henry A. Rafsky, New York, was appointed a member of the American Committee of the International Society of Gastro-Enterology, in accordance with the foregoing resolution.

On motion made by Dr. Russell S. Boles, Philadelphia, seconded by Dr. Louis A. Buie, Rochester, Minn., it was voted to reimburse Dr. A. F. R. Andresen, Brooklyn, for one half of his expenses in connection with the establishment of the American Board of Gastro-Enterology.

On motion made by Dr. A. F. R. Andresen, Brooklyn, seconded by Dr. Sidney A. Portis, Chicago, and many others, it was voted that the secretary send to Dr. Frank Smithies, Chicago, the greetings of the section, an expression of appreciation for all he has done for medicine, gastro-enterology and the Section on Gastro-Enterology and Proctology of the American Medical Association, and wishing him a speedy recovery.

Dr. Louis J. Hirschman, Detroit, read a paper on "The Importance of Routine Examination of the Colon." Discussed by Dr. Descum C. McKenney, Buffalo.

Dr. Samuel Morein, Providence, R. I., read a paper on "Diaphragmatic Hernia: Symptomatology, Diagnosis and Treatment." Discussed by Drs. I. R. Jankelson, Boston; Harry A. Singer, Chicago, and Samuel Morein, Providence, R. I.

Dr. Sara M. Jordan, Boston, read a paper on "A Review of the Gastric Ulcer Problem." Discussed by Drs. Russell S. Boles, Philadelphia; Sidney A. Portis, Chicago; Henry A. Rafsky, New York; Walter L. Palmer, Chicago; William Carpenter MacCarty, Rochester, Minn., and Sara M. Jordan, Boston.

Dr. Frank D. Gorham, St. Louis, read a paper on "Treatment of Intractable Peptic Ulcer by Intramuscular Injections of Metallic Bismuth."

Dr. David J. Sandweiss, Detroit, read a paper on "Comparative Value of Dietetic, Surgical and Parenteral Treatment in Peptic Ulcer."

These two papers were discussed by Drs. A. F. R. Andresen, Brooklyn; Sara M. Jordan, Boston; George B. Eusterman, Rochester, Minn.; Italo F. Volini, Chicago; Russell S. Boles, Philadelphia, and John H. Fitzgibbon, Portland, Ore.

Dr. G. V. Brindley, Temple, Texas, read a paper on "Carcinoma of the Rectum: Factors Affecting Its Cure." Discussed by Drs. Curtice Rosser, Dallas, Texas; Fred W. Rankin, Lexington, Ky., and G. V. Brindley, Temple, Texas.

Dr. J. W. Thompson, St. Louis, read a paper on "Secondary Resections in Recurring Carcinoma of the Colon." Discussed by Drs. C. J. Hunt, Kansas City, Mo., and C. F. Dixon, Rochester, Minn.

## SECTION ON RADIOLOGY

WEDNESDAY, MAY 13—MORNING

The meeting was called to order at 8:55 by the chairman, Dr. Edward L. Jenkinson, Chicago.

Dr. Albert Soiland, Los Angeles, delegate from the section to the House of Delegates of the American Medical Association, read the following report of the Reference Committee on Sections and Section Work:

With respect to the resolution presented by Dr. Albert Soiland, of the Section of Radiology, and adopted by the Section on Radiology, as follows:

WHEREAS, The answers published in the Department of Queries and Minor Notes of THE JOURNAL of the AMERICAN MEDICAL ASSOCIATION, being unsigned, are readily construed as representing the official opinion of the American Medical Association, thus giving them a standing and authority which would otherwise not obtain; and

WHEREAS, The answers are obviously on occasion merely the expression of individual opinion and should be interpreted in the light of that fact; and

WHEREAS, Without such interpretation the answers are misleading and deceptive and capable of working a serious injustice to many who may hold opinions at variance with those expressed; therefore be it

Resolved, That the Section on Radiology of the American Medical Association recommends to the House of Delegates that appropriate steps be taken to make plain to the casual readers of THE JOURNAL the status of and responsibility for the answers published in the Department of Queries and Minor Notes.

Your committee is reliably informed that the Department of Queries and Minor Notes of THE JOURNAL is one of the most popular features of our official organ, eagerly consulted by the rank and file of our membership. Your committee is further informed that the answers to questions appearing in this section of THE JOURNAL are furnished by a group of outstanding men selected because of their familiarity with the particular problems raised by the questioner. Notwithstanding, your committee, after consultation with the editor of THE JOURNAL, recommends that in the future there be inscribed at the head of this section of THE JOURNAL a statement setting forth that the answers given to the queries, although believed to be scientifically accurate, do not represent the consensus of any official body of the Association, unless so stated in the answer.

Dr. Soiland read the following report of the Reference Committee on Medical Education, regarding resolutions of Drs. F. F. Borzell, Philadelphia, and Albert Soiland, Los Angeles, regarding the practice of radiology and its division into professional and technical services and the resolution of the California Medical Association regarding other technical and professional services:

We recommend as follows:

1. We reiterate the principle enunciated by the House of Delegates at Cleveland in 1934 "that the practice of radiology, whether for diagnostic or therapeutic purposes, constitutes the practice of medicine." The action of the House of Delegates in 1925 establishing a section on radiology confirms this principle.

2. We further recommend that all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services.

Dr. Edward L. Jenkinson, Chicago, read the chairman's address, entitled "Cholecystography."

The following papers were read as a "Gastro-Intestinal Symposium":

Dr. Hollis E. Potter, Chicago: "The Use of Pressure Devices in X-Ray Diagnosis of Peptic Ulcer."

Drs. William J. Hoffman and George T. Pack, New York: "Cancer of the Duodenum: A Clinical and Radiologic Study of Sixteen Cases."

Dr. E. P. Pendergrass, Philadelphia: "Some Observations on the Physiology and Pathology of the Small Intestine."

Dr. James T. Case, Chicago: "Comparison of Methods of Roentgen Examinations of the Colon."

These four papers were discussed by Drs. B. R. Kirklin, Rochester, Minn.; Harry M. Weber, Rochester, Minn.; E. V. Powell, Temple, Texas; Ross Golden, New York; Hollis E. Potter, Chicago, and James T. Case, Chicago.

Drs. Sherwood Moore and Wendell G. Scott, St. Louis, presented a paper on "Roentgenkymography: Its Clinical and

Physiologic Value in Diseases of the Heart and Chest." Discussed by Dr. M. C. Sosman, Boston.

#### THURSDAY, MAY 14—MORNING

Dr. Wilbur Bailey, Los Angeles, read a paper on "Anomalies and Fractures of the Vertebral Articular Processes."

Dr. W. Warner Watkins, Phoenix, Ariz., read a paper on "Bony Anomalies in Wrist and Foot."

These two papers were discussed by Drs. Arthur Steindler, Iowa City; Fremont A. Chandler, Chicago; Leo G. Rigler, Minneapolis; Wilbur Bailey, Los Angeles, and W. Warner Watkins, Phoenix, Ariz.

The following papers were read as a symposium on "Lymph Gland Pathology":

Dr. Plinn F. Morse, Detroit: "Classification of Lymph Node Enlargements."

Dr. B. K. Wiseman, Columbus, Ohio: "The Character and Significance of the Blood Picture in the Lymphadenopathies."

Dr. F. W. O'Brien, Boston: "The Roentgen Treatment of the So-Called Malignant Lymphomas."

Dr. Leo G. Rigler, Minneapolis: "Leukemia of the Stomach Producing Hypertrophy of the Gastric Mucosa."

These four papers were discussed by Drs. Ross Golden, New York; Israel Davidsohn, Chicago; B. K. Wiseman, Columbus, Ohio, and F. W. O'Brien, Boston.

#### FRIDAY, MAY 15—MORNING

The following officers were elected: chairman, Dr. Ross Golden, New York; vice chairman, Dr. B. R. Kirklin, Rochester, Minn.; secretary, Dr. John T. Murphy, Toledo, Ohio; executive committee: Dr. John W. Pierson, Baltimore; Dr. Edward L. Jenkinson, Chicago; Dr. Ross Golden, New York; delegate, Dr. E. H. Skinner, Kansas City, Mo.; alternate, John W. Pierson, Baltimore; member of the Board of Radiology, Dr. Lyell C. Kinney, San Diego, Calif.; delegate to the fifth International Congress of Radiology, Dr. W. F. Manges, Philadelphia; alternate, Dr. John T. Murphy, Toledo, Ohio.

It was moved that the House of Delegates of the American Medical Association be petitioned to permit the Section on Radiology to form a committee for the purposes of classifying hospitals as to their departments of radiology. The motion was lost for want of a second.

Dr. James F. Kelly, Omaha, read a paper on "The Present Status of the X-Rays as an Aid in the Treatment of Gas Gangrene." Discussed by Drs. E. H. Skinner, Kansas City, Mo.; John J. Faust, Tyler, Texas; W. Warner Watkins, Phoenix, Ariz., and James F. Kelly, Omaha.

Drs. Fred M. Hodges and R. A. Berger, Richmond, Va., presented a paper on "Roentgen Therapy of Some Acute, Sub-

acute and Chronic, More or Less Localized Infections." Discussed by Drs. Edward H. Skinner, Kansas City, Mo.; F. F. Borzell, Philadelphia; J. James Duffy, Denison, Iowa; L. R. Sante, St. Louis; W. Edward Chamberlain, Philadelphia; Leo G. Rigler, Minneapolis; Rollin H. Stevens, Detroit; William H. Sargent, Oakland, Calif., and R. A. Berger, Richmond, Va.

Drs. J. Cash King and Leo C. Harris Jr., Memphis, Tenn., presented a paper on "Cystic Disease of the Lung." Discussed by Drs. L. R. Sante, St. Louis; James L. Dubrow, Des Moines, Iowa; Carleton B. Peirce, Ann Arbor, Mich.; Leo G. Rigler, Minneapolis, and J. Cash King, Memphis, Tenn.

Dr. Robert P. Ball, Chattanooga, Tenn., read a paper on "Needle (Aspiration) Biopsy of Bone Lesions." Discussed by Dr. Harold G. F. Edwards, Shreveport, La.

Drs. Carleton B. Peirce and Isadore Lampe, Ann Arbor, Mich., presented a paper on "Giant Cell Bone Tumor: Further Observations on the Response to Surgical and Radiation Therapy."

### SECTION ON MISCELLANEOUS TOPICS Session on Tuberculosis

#### WEDNESDAY, MAY 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. James Alexander Miller, New York, who stated that the session was being held as an experiment to determine the demand felt by the members for having a special section of the American Medical Association on tuberculosis.

Dr. James Alexander Miller, New York, read the chairman's address, entitled "Resistance in Tuberculosis."

Dr. Max Pinner, Oneonta, N. Y., read a paper on "Pathogenesis of Tuberculosis."

These two papers were discussed by Drs. Henry C. Sweany, Chicago; F. M. Pottenger Sr., Monrovia, Calif.; James Alexander Miller, New York, and Max Pinner, Oneonta, N. Y.

Dr. J. Burns Amberson Jr., New York, read a paper on "Case Finding Methods and Early Diagnosis in Tuberculosis." Discussed by Drs. George H. Hoxie, Kansas City, Mo.; William Devitt, Allenwood, Pa.; Sam H. Snider, Kansas City, Mo.; H. I. Spector, St. Louis, and J. Burns Amberson Jr., New York.

Dr. Le Roy S. Peters, Albuquerque, N. M., read a paper on "Sanatorium Care of the Tuberculous." Discussed by Drs. A. M. Forster, Colorado Springs, Colo.; C. M. Hendricks, El Paso, Texas (read by Secretary Charles H. Cocke, Asheville, N. C.), and Victor Strong Randolph, Phoenix, Ariz.

Dr. J. J. Singer, St. Louis, read a paper on "Collapse Therapy in Pulmonary Tuberculosis." Discussed by Drs. J. W. Cutler, Philadelphia; O. E. Egbert, El Paso, Texas, and J. J. Singer, St. Louis.

## THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Kansas City session was characterized by the devotion with which the demonstrators in the various booths remained at their tasks under difficult circumstances and the continuous and sustained interest shown by the ever present crowds in the aisles. There were 150 exhibits prepared by individuals under the auspices of the various sections of the Scientific Assembly; twenty exhibits in the Educational Classification were prepared by national organizations and government agencies; there were four exhibits from the headquarters of the American Medical Association and two special exhibits subsidized by the Board of Trustees.

The special exhibit on diabetes was presented under the auspices of the following committee: E. P. Joslin, chairman, Boston; Charles H. Best, Toronto; Louis I. Dublin, New York; Ralph H. Major, Kansas City, Mo.; Howard F. Root, Boston; Bernard Smith, Los Angeles, and Russell M. Wilder, Rochester, Minn., with the assistance of Cecil Striker, Shields Warren, Alexander Marble and C. N. H. Long. In addition, thirty-four physicians gave short talks on the subject of diabetes in a room adjoining the exhibits, where also motion pictures on diabetes were shown at various intervals during the week.

The special exhibit on fractures was presented under the auspices of a committee consisting of Kellogg Speed, chairman,

Chicago; Frank D. Dickson, Kansas City, Mo., and Walter Estell Lee, Philadelphia, assisted by an advisory committee consisting of Isidore Cohn, New Orleans; H. Earle Conwell, Birmingham, Ala.; Frederic J. Cotton, Boston; William Darach, New York; Richard B. Dillehunt, Portland, Ore.; Eldridge L. Eliason, Philadelphia; Leo Eloesser, San Francisco; George W. Hawley, Bridgeport, Conn.; Melvin S. Henderson, Rochester, Minn.; James M. Hitzrot, New York; William L. Keller, Washington, D. C.; Roy D. McClure, Detroit; Frank R. Ober, Boston; Dallas B. Phemister, Chicago; J. Spencer Speed, Memphis, Tenn., and John C. Wilson, Los Angeles. Fifty-two physicians from various parts of the country assisted with the demonstrations. Acknowledgment is made to the Surgeon General of the United States Army and to Col. E. M. Blanchard and men from Station Hospital, Kansas City, for the very efficient service which they rendered in connection with the fracture exhibit. Appreciation is also expressed to the management of St. Luke's Hospital, Kansas City, for the cooperation rendered in furnishing nurses and supplies for the exhibit.

Other features of the Kansas City session included a small group of exhibits on traffic accidents, stressing especially emer-



agency treatment; a group of fifteen exhibits from the University of Kansas School of Medicine, presenting a wide range of subjects, and motion picture programs by the Section on Ophthalmology and by the Section on Orthopedic Surgery, shown in spaces adjoining the exhibits of those two sections.

## REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

### CLASS I

[Awards in Class I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.]

The gold medal to Charles B. Huggins, W. J. Noonan and B. H. Blocksom, Department of Surgery, University of Chicago, Chicago, for original investigation on the distribution of red and yellow bone marrow and the reticulo-endothelial system in the bone marrow.

The silver medal to G. C. Supplee and S. Ansbacher, Research Division, The Borden Company, New York, for original investigations on the development of pure lactoflavin, an entity of the water soluble vitamin B complex.

The bronze medal to Alvan L. Barach, Presbyterian Hospital, New York, for original investigations on the rôle of helium and oxygen in various types of dyspnea.

Certificates of merit, Class I, are awarded to the following (alphabetically arranged):

Arthur F. Abt, Chester J. Farmer and Elizabeth Smith, Northwestern University Medical School, Chicago, for exhibit illustrating the metabolism of cevitamic acid of infants and children.

Frederic A. Gibbs, William G. Lennox, Hallowell Davis, Erna L. Gibbs and Albert Grass, Harvard Medical School, Boston, for exhibit illustrating the electro-encephalograph and its application to the study of epilepsy.

Wendell G. Scott and Sherwood Moore, Edward Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, for exhibit illustrating the clinical and physiologic value of kymography in diseases of the heart and chest.

Phillips Thygeson and Francis I. Proctor, University of Iowa, Iowa City, for exhibit illustrating the differential diagnosis of trachoma.

In addition, the following exhibits are deemed worthy of honorable mention (alphabetically arranged):

That of Archibald L. Hoyne, Municipal Contagious Disease Hospital, Board of Health and Cook County Hospital, Chicago, and N. S. Ferry, Parke, Davis and Company, Detroit, for an exhibit on meningococcus antitoxin in the treatment of epidemic meningitis.

That of H. O. Mahoney and Barry J. Anson, Northwestern University Medical School, Chicago, for an exhibit illustrating a radiographic study of anatomic sections.

That of O. H. Robertson and W. D. Sutliff, Department of Medicine, University of Chicago, Chicago, for an exhibit illustrating the results of a clinical and experimental study of the lesion of lobar pneumonia.

### CLASS II

[Awards in Class II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation.]

The gold medal to Rudolf Schindler, Marie Ortmyer and John F. Renshaw, University of Chicago, Chicago, for excellence of presentation of an exhibit on chronic gastritis as studied by gastroscopy.

The silver medal to John O. Bower, J. C. Burns and H. A. Mengle, Department of Research Surgery, Temple University School of Medicine and General Hospital, Philadelphia, for an exhibit illustrating the treatment of spreading peritonitis complicating acute appendicitis.

The bronze medal to Hamilton Montgomery, Mayo Clinic, Rochester, Minn., for excellence of presentation of an exhibit illustrating the histopathology of various types of cutaneous tuberculosis.

Thirty-eight papers read before the various sections of the Scientific Assembly were also accompanied by material in the Scientific Exhibit, thus giving an opportunity to the individuals who had heard the papers to consult the authors and go over the work at leisure.

Certificates of merit, Class II, are awarded to the following (alphabetically arranged):

R. Russell Best, N. Frederick Hicken and Howard B. Hunt, Departments of Anatomy, Surgery and Roentgenology, University of Nebraska College of Medicine, Omaha, for excellence of presentation of an exhibit illustrating cholangiographic studies of the gallbladder and biliary ducts.

W. James Gardner, Neurosurgical Division, Cleveland Clinic, Cleveland, for excellence of presentation of an exhibit on hereditary brain tumors.

George Levene and Henry H. Lerner, Robert Dawson Evans Memorial for Clinical Research and Preventive Medicine, Massachusetts Memorial Hospitals, Boston, for excellence of presentation of an exhibit illustrating the roentgenoscopic appearance of the heart.

W. Eugene Wolcott, Des Moines, Iowa, for excellence of presentation of an exhibit illustrating circulation in the head and neck of the femur.

### HONORABLE MENTION

In addition, the following exhibits are deemed worthy of honorable mention (alphabetically arranged):

That of E. C. Hamblen and B. Carter, Department of Obstetrics and Gynecology, Duke University Hospital and School of Medicine, Durham, N. C., for an exhibit on studies of the endometrium in functional abnormalities of menstruation and its response to endocrine therapy.

That of Bayard T. Horton, George E. Brown (deceased) and Grace Roth, Mayo Foundation for Medical Education and Research, Rochester, Minn., for an exhibit on hypersensitiveness to cold.

A special certificate of merit is awarded to the New York State Institute for the Study of Malignant Diseases, Buffalo, for its exhibit on cancer.

In addition, the exhibit of the Advisory Board for Medical Specialties and of the American Society for the Control of Cancer are deemed worthy of honorable mention.

### SPECIAL COMMENDATIONS

Particular commendation is made of the remarkable exhibit by members of the Mayo Clinic, Rochester, Minn., on diseases of the thyroid gland.

Special commendation is also made of the exhibit by the University of Kansas School of Medicine; of the exhibit on undulant fever by the United States Public Health Service; of the exhibit on screw worm myiasis of man and animals by the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture; of the exhibit on color photography by the Army Medical Museum, Washington, D. C.

The Committee commends especially the many individual exhibitors who have developed exhibits from their own resources and have taken a constant and active part in demonstrating their exhibits to visitors.

### SPECIAL EXHIBITS (SUBSIDIZED)

The Committee on Awards particularly commends the special exhibits sponsored by the American Medical Association and expresses grateful appreciation to Dr. E. P. Joslin and his committee for the comprehensive exhibit and demonstrations on diabetes, and to Dr. Kellogg Speed and his committee for the instructive exhibit on fractures with practical demonstrations.

### RECOMMENDATIONS

The Committee on Awards believes that the method of correlating the Scientific Exhibit with the Scientific Assembly by the appointment of section exhibit representatives is of advantage and should be continued.

The Committee appreciates the difficulties encountered in securing proper accommodations for the Scientific Exhibit; it ventures to recommend, however, that special consideration be given to this problem in future years so that sufficient space may be available to accommodate the increasing number of physicians who visit the exhibit and so that a suitable environment may be secured which will be in keeping with the high standard of the exhibits.

The Committee recommends to the Committee on Scientific Exhibit that the present gold medal be known as the Billings Medal and that other medals be designed for the various awards to be known by definite names.

The Committee believes that the American Medical Association owes a debt of gratitude to the Committee on Scientific

Exhibit of the Board of Trustees, to the Advisory Committee, and to Dr. Thomas G. Hull, director in charge of the Scientific Exhibit.

The Committee cannot commend too highly the arrangements, general and special, the efficient management, the instructiveness and the scientific as well as practical value of the exhibit. The exhibitors, in many cases at personal sacrifice, present exhibits prepared by modern methods and devices for the illustration of recent advances in the various fields of medicine.

LUDVIG HEKTOEN, Chairman, Chicago.

A. H. AARON, Buffalo.

WALTER FREEMAN, Washington, D. C.

THOMAS PARRAN JR., Washington, D. C.

W. W. WASSON, Denver.

## RESULTS OF THE GOLF TOURNAMENT

Two hundred and nine medical golfers from all parts of the United States played the interesting Mission Hills and the Kansas City Country Club courses in Kansas City on the occasion of the twenty-second annual tournament of the American Medical Golfing Association, Monday, May 11. Most of the entrants played thirty-six holes, enjoying eighteen over one course in the morning and the second round over the other links in the afternoon. Perfect weather was scored and all records were broken with a maximum attendance, greatest number of prizes and lowest championship scores. The 110 trophies and prizes were awarded after the golfers' dinner at Mission Hills club house, presided over by Dr. M. M. Cullom of Nashville, Tenn., president of the A. M. G. A. Dr. Clarence Capell of Kansas City, chairman of the golf committee, made the presentations. Speakers at the banquet included Drs. Logan-Clendening of Kansas City and Ernest Kelley of Omaha.

### DR. ROY EMANUEL OF OKLAHOMA IS CHAMPION

The championship was won by Dr. Roy Emanuel of Chickasha, Okla., who turned in an 82-74—156 for the thirty-six holes. He received the famous Will Walter Trophy, named in honor of the organizer and dean of the A. M. G. A. The Handicap Championship was won by Dr. W. C. Scheidt of Celina, Ohio, who bagged the Detroit Trophy, presented by the Detroit hosts in 1916. The Eighteen Hole Championship went to Dr. F. T. Gallagher of Cleveland, who took home the Golden State Trophy; the second prize in this event was won by Dr. W. L. Sucha of Omaha, the third prize by Dr. E. F. DeVilbiss of Kansas City, the fourth prize by Dr. D. W. Darwin of Woodward, Okla., and the fifth prize by Dr. W. J. Woolston of Pasadena, Calif. The Eighteen Hole Handicap Championship was awarded to Dr. C. B. Voigt of Mattoon, Ill., who won the Ben Thomas Trophy, the second prize to Dr. S. B. Berkley of Canton, Ohio, the third prize to Dr. J. J. Ryan of St. Paul, the fourth prize to Dr. W. R. Clinton of Detroit, the fifth prize to Dr. C. N. Linquist of Kansas City and the sixth prize to Dr. Henry Harkins of Chicago.

### DRS. CANTRELL AND NICOLL ARE TROPHY WINNERS

The Maturity Event, limited to Fellows over 60 years of age, for the best net score on the first eighteen holes was won by Dr. C. D. Cantrell of Kansas City, who received the Minneapolis Trophy; the second prize went to Dr. J. A. Hendrick of Shreveport, La., the third prize to Dr. W. E. Baker of Des Moines, the fourth prize to Dr. M. M. Cullom of Nashville, the fifth prize to Dr. Walter J. Wilson of Detroit, the sixth prize to Dr. J. P. DeWitt of Canton, Ohio, the seventh prize to Dr. W. D. Black of St. Louis and the eighth prize to Dr. J. B. Sampsell of Van Wert, Ohio.

Dr. Homer K. Nicoll of Chicago, president of the A. M. G. A. in 1934, won the Old Guard Championship, awarded to past-presidents, and received the Wendell Phillips Trophy. Second prize went to Dr. E. G. Zabriskie of New York, president in 1931, and the third prize to Dr. Charles Lukens of Toledo, president in 1935.

### SIX FLIGHTS, GROSS AND NET

The Championship Flight low gross was won by Dr. L. W. Pumphrey of Pittsburgh, who gained the St. Louis Trophy. Other winners were Drs. W. F. Manges of Philadelphia, J. P.

Loudon of Yakima, Wash., J. L. Lattimore of Topeka, Paul Tipton of Omaha, G. R. Love of Oconomowoc, Wis., and H. T. Jones of Lawrence, Kan. The net prize in this flight went to Dr. D. A. Williams of Kansas City, who won the President's Trophy, a sterling silver pitcher presented by Dr. M. M. Cullom; other winners were Drs. J. D. Fouts of Dayton, J. J. Hovorka of Emporia, G. W. Underwood of Dallas, E. R. Dewese of Kansas City and R. P. Bell of Cleveland.

The First Flight gross winners were Drs. H. L. D. Kirkham of Houston, Texas, D. H. Houston of Seattle, H. M. Roberts of Kansas City, C. D. Snyder of Winfield, Kan., James Greenwood of Houston and Q. O. Gilbert of Oakland, Calif. First prize among the nets was the Chairman's Trophy, presented by Dr. Clarence Capell and won by Dr. O. A. Cowart of Bristow, Okla. Other prizes were won by Drs. E. M. Sutton of Salina, Kan., A. C. Smith of Wooster, Ohio, T. S. Finney of Wichita, W. K. Fast of Atchison, C. V. Edwards of Council Bluffs and F. E. Wrightman of Sabetha, Kan.

The Second Flight gross winners were Drs. D. E. Eggleston of Kingman, Kan., C. P. Rutledge of Shreveport, E. D. Maloney of Omaha, H. S. Browne of Ponca City, Okla., F. G. Mays of Washington, Mo., J. P. Brennan of Pendleton, Ore., and Joseph Hanson of Sarasota, Fla. Net prizes went to Drs. L. M. Otis of Celina, Ohio, O. E. Satter of Prairie du Chien, Wis., J. M. Shaw of Wichita and M. R. Haley of Dayton.

The Third Flight gross winners were Drs. H. A. Gestring of Kansas City, W. S. Larrabee of Tulsa, W. W. Gist of Kansas City, D. A. Duncan of Shreveport, Dan Hogan of Kansas City, J. W. Shirer of Pittsburgh and O. A. Brines of Detroit. Net winners in this flight were Drs. C. A. Nicoll of Panora, Iowa, J. W. Speelman of Pittsburgh, J. M. Lamme of Walsenburg, Colo., J. R. Ripton of Cleveland and P. H. Owens of Kansas City.

Fourth Flight gross winners were Drs. E. N. Gentry of Kansas City, J. J. Caveness of Oklahoma City, A. A. Olson of Wichita, W. J. Feehan of Kansas City, Kan., and H. M. Clark of Platte City, Mo. Winners of the net prizes were Drs. E. W. Shank of Dayton, L. A. O'Brien of Kansas City, E. T. Warren of Stuart, Iowa, J. A. McLaughlin of Greensburg, Kan., and H. L. Charles of Atchison, Kan.

Fifth Flight (net only) winners were Drs. W. J. Ryan of Duluth, J. R. Fowler of Spencer, Mass., E. E. Gingles of Onawa, Iowa, M. C. Green of Omaha, P. C. Quistgard of Kansas City and B. W. Rhamy of Fort Wayne, Ind.

### KICKERS' HANDICAP

The Blind Bogey, or Kickers' Handicap, was won by Dr. T. E. Hunt of Paris, Texas, who bagged the Milwaukee Trophy. Winners of the other prizes were Drs. J. E. Hutchinson of Denver, E. O. Baker of Wichita, W. R. Hornaday of Des Moines, L. L. Bresette of Kansas City, Kan., D. F. Byrd of Nashville, W. J. Harrison of Cheyenne, C. A. McGuire of Kansas City, Clayton Andrews of Lincoln, Neb., G. W. Jones of Clovis, N. M., and E. D. Ebright of Wichita.

The officers of the American Medical Golfing Association express thanks to the many friends of the association who helped make the Kansas City tournament such a notable suc-

cess. They are especially grateful to the Kansas City committee, who arranged all details so efficiently, and to the scores of prize donors, whose generosity is acknowledged.

#### ELECTION OF OFFICERS

Dr. W. Albert Cook of Tulsa, Okla., was elected president of the A. M. G. A. for the ensuing year; Dr. E. S. Edgerton, Wichita, was chosen first vice president and Dr. Clarence Capell of Kansas City second vice president. Dr. Cullom, retiring president, was made a member of the board of directors. The next tournament will be held in Atlantic City at the time of the 1937 annual session.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Clinical Society Organized.**—Physicians from Mobile, Pensacola, Gulfport and Biloxi met in Mobile recently to organize the Gulf Coast Clinical Society. Dr. William R. Meeker, Mobile, was named chairman of the society and Dr. Mozart A. Lischkoff, Pensacola, secretary-treasurer. The society will hold its first clinical session in October.

### CALIFORNIA

**Hospital News.**—The federal government has appropriated \$60,000 to construct a special unit for Indians at Wish-iah Sanatorium, Auberry.

**Deaths from Cancer Increase.**—There were 8,435 cancer deaths registered in California in 1935 as compared with 7,971 in 1934, showing mortality rates, respectively, of 134.4 and 129.4 per hundred thousand of population. Cancer of the digestive tract and peritoneum was recorded in the deaths of 3,949 persons. Cancer of the uterus was second on the list, causing 921 deaths, while cancer of the breast was responsible for 863 deaths.

### COLORADO

**University News.**—Dr. Francis M. Pottenger, Monrovia, Calif., addressed a meeting at the University of Colorado School of Medicine, Denver, May 7, on "Physiological Approach to the Diagnosis and Treatment of Tuberculosis"; the lecture was given under the auspices of the recently inaugurated Phi Rho Sigma Lectureship.

**Society News.**—The Medical Society of the City and County of Denver was addressed, May 5, by Drs. George B. Kent and Atha Thomas on "Surgical Treatment of Thyroid Diseases" and "Difficult Fractures About the Ankle Joint" respectively. Dr. Clifford Lee Wilmoth, for several years a medical missionary in Ethiopia, gave an address on that country. Dr. Jesse W. White, Pueblo, discussed "Thyroid and Pregnancy" before the Pueblo County Medical Society, April 7. Dr. Nolie Mumey, Denver, discussed the history of medicine before the Larimer County Medical Society, May 6. Dr. Edward R. Phillips, Delta, discussed professional ethics before the Delta County Medical Society, April 24. Dr. Austin E. Miller was elected an honorary member of the society at this meeting; he now lives in McAllen, Texas.

### CONNECTICUT

**Dr. Long Named Successor to Professor Mendel.**—Dr. Cyril N. H. Long, director of the George S. Cox Medical Institute, University of Pennsylvania Hospital, Philadelphia, has been appointed professor of physiologic chemistry at Yale University School of Medicine, New Haven; he succeeds the late Lafayette B. Mendel as chairman of the laboratory of physiologic chemistry. Dr. Long graduated in 1928 from McGill University Faculty of Medicine. In 1932 he was made director of the Cox Institute. Dr. Long is well known for his research on the endocrine glands and on carbohydrate metabolism.

**Society News.**—At a meeting of the Tri-City Medical Society of Norwich, New London and Willimantic, recently, Dr. Richard B. Cattell, Boston, discussed "Management of

Surgical Diseases of the Colon and Rectum."—The New London County Medical Association was addressed April 2 by Dr. Charles F. Wilinsky, Boston, on the economic aspects of medicine. At a meeting of the radiologic section of the Connecticut State Medical Society in Hartford, April 9, a paper on "Roentgen Diagnosis of Regional Ileitis" was presented by Drs. Douglas J. Roberts and Ralph T. Ogden. Dr. George W. Corner, Rochester, N. Y., addressed the Yale Medical Society, May 13, in New Haven, on "The Hormone of the Corpus Luteum." He lectured, May 12, on "Medicine in the Poems of Chaucer."

**Health at Hartford.**—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million indicate that for the week ended May 23 the highest mortality rate (21.5) appears for Hartford, the rate for the group of cities as a whole being 11.7. The mortality rate for the corresponding period last year was 11.5 for Hartford and 11.6 for the group of cities as a whole. The annual rate for eighty-six cities for the twenty-one weeks of 1936 was 13.4 as against a rate of 12.5 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

### DISTRICT OF COLUMBIA

**Academy of Medicine Formed.**—The Academy of Medicine of Washington was organized at a meeting, April 28, "for the advancement of the science of medicine and to promote the mutual exchange of knowledge between medical and other scientific groups." Membership is limited to sixty ordinary resident members and thirty associate and nonresident members and is nonmedical as well as medical in the sense that no special emphasis has been given to the medical degree as compared with the doctor's degree in one of the medical or allied sciences. Since the academy will draw its membership from all medical and associated scientific groups, it will serve as a forum for exchange of ideas and discussion of problems of general interest in medical science. Officers are Dr. William A. White, president; Carl Voegtlin, Ph.D., vice president; Dr. William C. White, treasurer, and Dr. Errett C. Albritton, secretary. Directors are Dr. Aleš Hrdlička, Dr. Sterling Ruffin, Lyman J. Briggs, Ph.D., Dr. Earl B. McKinley and Dr. Matthew W. Perry.

### FLORIDA

**State Medical Election.**—Dr. Edward Jelks, Jacksonville, was chosen president-elect of the Florida Medical Association at its recent annual session aboard the S. S. Florida. Dr. Orion O. Feaster, St. Petersburg, was installed as president. The next annual session will be held at St. Petersburg.

### ILLINOIS

**Outbreak of Dysentery.**—The state health department announces that an outbreak of dysentery at Ohio, involving 150 persons, was attributed to a contaminated public water supply. A clogged sewer main caused sewage from the town to back up through an outlet drain into the partly emptied water reservoir. This contaminated water was then pumped into the public supply system.

**Personal.**—Roger Adams, Ph.D., professor of organic chemistry and head of the department, University of Illinois, Urbana, was presented with the Willard Gibbs medal at a banquet, May 22, given by the Chicago section of the American Chemical Society. Dr. Samuel P. Colehour has resigned as city health officer of Mount Carroll, and Dr. Lawrence Isenhardt has been named to succeed him. Dr. Walter S. Swan, Harrisburg, was elected to honorary membership in the Saline County Medical Society at a celebration, April 15, in honor of his eighty-second birthday. Dr. Frederick W. Risser, Strasburg, was given a reception by the local chamber of commerce, April 27, in recognition of his completion of fifty years in the practice of medicine.

### Chicago

**Society News.**—Dr. Clara Jacobson addressed the Chicago Council of Medical Women, June 5, on "Sedimentation Tests in Health and Disease." At a meeting of the Chicago Club for the Study of Arthritis, June 3, Drs. Eugene F. Traut and Emil G. Vrtiak presented a "Statistical Study of Allergy in Arthritis," and Edwin P. Jordan, "Pathology of Rheumatoid Arthritis."

**The Capps Prize.**—The Institute of Medicine of Chicago announces that the time limit for submission of manuscripts for the Joseph A. Capps Prize is December 31. The \$500 prize will be awarded for meritorious investigation in medicine or in the specialties of medicine; the investigation may be also in the fundamental sciences, provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who have received the degree of doctor of medicine during the year 1934 or thereafter. Manuscripts should be submitted to the secretary of the Institute of Medicine of Chicago, 122 South Michigan Avenue.

### INDIANA

**Society News.**—At a meeting of the Fountain-Warren Counties Medical Society in Perrysville, May 7, Dr. Wendell D. Little, Indianapolis, discussed "Gallstones and Infection of the Biliary Tract."—Dr. Edward C. Holmblad, Chicago, addressed the Muncie Academy of Medicine in Muncie, May 5, on traumatic surgery.—The Knox County medical and dental societies were addressed in Vincennes, May 5, by Dr. John W. Graves and J. T. Gregory, D.D.S., and Gerald D. Timmons, D.D.S., all of Indianapolis, on "Role of the Teeth in Foci of Infection." Dr. Timmons and Dr. James F. Reilly, Vincennes, also discussed Indiana's program for maternal and child health under the Social Security Act.—Dr. William F. Hughes, Indianapolis, was elected president of the Indiana Academy of Ophthalmology and Otolaryngology in Martinsville, April 8, and Dr. Marlow W. Manion, Indianapolis, secretary. The academy changed its constitution so that all future meetings may be held in Indianapolis. Dr. Lee Wallace Dean, St. Louis, was guest speaker on allergic rhinitis.—Dr. Robert R. Dieterle, Ann Arbor, Mich., discussed "The Duty of the Practicing Physician Toward the Psychoneurotic Patient" at a meeting of the Northeastern Indiana Academy of Medicine in Garrett, April 23.

### IOWA

**Twin Lakes District Meeting.**—The fourteenth annual assembly of the Twin Lakes District Medical Society will be held at Burns' Alhambra Pavilion, Twin Lakes, Rockwell City, June 11, with Dr. Paul W. Van Metre, Rockwell City, presiding. Dr. Olin West, Secretary and General Manager, American Medical Association, Chicago, will speak. Diagnostic clinics in general medicine, eye diseases, general surgery, gynecology and pediatrics will be presented by the following guests: Drs. Robert W. Keeton, professor and head of the department of medicine, University of Illinois College of Medicine, Chicago; Cecil S. O'Brien, professor and head of the department of ophthalmology, State University of Iowa College of Medicine, Iowa City; Claud F. Dixon of the division in surgery, Mayo Foundation, Rochester, Minn.; Ralph A. Reis, associate in obstetrics and gynecology, Northwestern University Medical School, Chicago, and Willis Stanley Gibson, associate professor of pediatrics at Northwestern. The Twin Lakes District Medical Society is composed of the county medical societies of Calhoun, Carroll, Greene, Hamilton, Humboldt, Ida, Sac, Kossuth, Pocahontas, Webster and Wright, affiliated for graduate clinical instruction.

### KANSAS

**Personal.**—Dr. Robert J. Lanning, Junction City, has been appointed county physician and health officer of Geary County, succeeding the late Dr. William S. Yates.—Dr. Franklin E. Schenck, Burlingame, was guest of honor at a banquet, April 16, given by the newly created Osage County Medical Society; he has been practicing in Burlingame for forty years.—A catalogue of paintings presented to the people of Wichita by Dr. and Mrs. Herman de B. Seebold, New Orleans, has recently been issued. The gift was in memory of Mrs. Seebold's father, Mr. William Henry Kinney.

### LOUISIANA

**State Medical Election.**—Dr. Charles M. Horton, Franklin, was chosen president-elect of the Louisiana State Medical Society at its annual meeting in Lake Charles, April 29, and Dr. Hiram W. Kostmayer, New Orleans, was inducted into the presidency. Vice presidents are Drs. Roy Carl Young, Covington; Allen W. Martin, Bogalusa, and Lionel Bienvenu, Opelousas. Dr. Paul T. Talbot, New Orleans, was reelected secretary-treasurer for two years, and Monroe was chosen as the place for the 1937 meeting. The organization of the Louisiana Gynecological and Obstetrical Society took place during this meeting, April 28. Officers are Drs. Peter Graffagnino,

president; Edward L. King, vice president, and Walter E. Levy, secretary; all are of New Orleans. Mrs. George D. Feldner, New Orleans, was chosen president-elect of the woman's auxiliary to the state medical society at a session, April 29, and Mrs. James Byron Vaughan, Monroe, was installed as president.

### MASSACHUSETTS

**State Medical Meeting at Springfield.**—The one hundred and fifty-fifth anniversary meeting of the Massachusetts Medical Society will be held at the Hotel Kimball and Municipal Auditorium in Springfield, June 8-10. The speakers will include the following physicians:

Edward A. Schumann, Philadelphia, Antepartum Hemorrhage.  
Louis Schwartz, New York, Industrial Dermatoses.  
Mont R. Reid, Cincinnati, Problems of Wound Healing.  
Alice Hamilton, Boston, Some New and Unfamiliar Industrial Poisons.  
Arlie V. Bock, Boston, Use and Abuse of Transfusion in Medical Practice.  
Joseph H. Marks, Fall River, Roentgen-Ray Findings in Diaphragmatic Hernia.

A symposium on medical economics will be held Tuesday afternoon, the round table discussion to be opened by Dr. Charles E. Mongan, Somerville, president of the society. Dr. George Blumer, David P. Smith clinical professor of medicine, Yale University School of Medicine, New Haven, will deliver the Shattuck lecture Monday evening; his subject will be "Trichinosis, with Special Reference to Changed Conceptions of the Pathology and Their Bearing on the Symptomatology." Dr. Reginald Fitz, Boston, Wade professor of medicine, Boston University School of Medicine, will present the annual discourse Wednesday afternoon, entitled "From Cow-Path to State Road."

### MICHIGAN

**Personal.**—Dr. Hugh W. Williams, assistant superintendent of the Oakland County Tuberculosis Sanatorium, Pontiac, has been named medical superintendent of the Oakland County Infirmary.—Dr. Guy R. Post, White Cloud, director of the tricity health unit of Newaygo, Oceana and Lake counties, has been named to a similar position with a newly organized unit in Mecosta and Osceola counties, with headquarters in Big Rapids.—Dr. Frederick H. Cole, Detroit, has been appointed a member of the state board of registration in medicine, succeeding Dr. John E. Handy, Caro, resigned.—Dr. Nina C. Wilkerson has been appointed health officer of Sturgis, succeeding Dr. Charles G. Miller.—Dr. Neal J. McCann has been named health officer of Ishpeming, succeeding Dr. Joseph P. Bertucci.

**Society News.**—Dr. Eugene B. Potter, Ann Arbor, discussed "Some Phases of Plastic Surgery and Treatment of the Late Stage of Burns" before the Calhoun County Medical Society, May 5.—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, addressed the Detroit Teachers' Association in Detroit, May 25, on "Food, Fads and Follies." Previous to the lecture he was guest of honor at a banquet in the club-rooms of the Wayne County Medical Society.—At a meeting of the Kent County Medical Society, May 27, Dr. Robert L. Novy, Detroit, discussed endocarditis.—At the annual meeting of the Wayne County Medical Society, May 18, Dr. Raymond B. Allen, dean, Wayne University School of Medicine, Detroit, discussed "Trends in Medical Education." Dr. Frederick B. Burke was chosen president-elect of the society and Dr. Thomas R. K. Gruber, Eloise, was installed as president.—Dr. Harry L. Huber, Chicago, discussed "Present-Day Problems in Allergy" before the Kalamazoo Academy of Medicine, May 19.

### MISSISSIPPI

**State Medical Election.**—Dr. William L. Little, Wesson, was named president-elect of the Mississippi State Medical Association at its annual meeting in Greenville, May 5-7, and Dr. Harvey F. Garrison Sr., Jackson, was installed as president. Vice presidents are Drs. Angus L. Emerson, Hernando; Guy C. Jarratt, Vicksburg, and Charles C. Hightower, Hattiesburg. The next annual meeting will be held in Meridian, May 11-13, 1937.

### MISSOURI

**Personal.**—Dr. Theodore R. Meyer, Paw Paw, since July 1, 1934, health officer of Van Buren County, Mich., has been appointed to a similar position in St. Louis County.

**Society News.**—At a meeting of the St. Louis Medical Society, May 19, under the auspices of the St. Louis health division, speakers included Dr. George H. Mathae on "Treatment of Arthritis with Mecholyol Iontophoresis." Dr. Joseph Grindon Sr. discussed "Some Examples of Contact Dermatitis"

before the society, April 21, and Dr. Norman Tobias, "Summer Skin Diseases in the St. Louis Area." A symposium on the heart was presented by Drs. Drew W. Luten, Oswald P. J. Falk and Julius Jensen.

### NEBRASKA

**Hospital News.**—Bryan Memorial Hospital, Lincoln, held its annual clinic day April 6. Guests were Drs. Clifford G. Grulee, Chicago, who discussed breast feeding; William H. Olmsted, St. Louis, nephritis; Richard L. Sutton, Kansas City, Mo., dermatologic diseases; William C. Menninger, Topeka, Kan., problems of the general practitioner with regard to mental health of his patients, and Nathan A. Womack, St. Louis, the biliary tract.

**A Half Century of Service.**—Dr. Charles F. Kirkpatrick, Ashland, was guest of honor at a public reception sponsored by the Ashland chamber of commerce, April 8, celebrating his fiftieth anniversary of medical practice in the town. He received a traveling bag as a memento. Dr. Kirkpatrick is 78 years old.—Physicians of Dodge and Saunders counties gave a dinner in honor of Dr. Andrews E. Stuart, Cedar Bluffs, April 1, in Fremont, in celebration of his completion of fifty years of practice in one community. His colleagues gave him a watch as a token of esteem.

### NEW JERSEY

**Society News.**—Dr. Edward Rose, Philadelphia, addressed the Gloucester County Medical Society, April 16, in Woodbury; his subject was "Basal Metabolism and Its Relation to Disease."—At a meeting of the Mercer County Medical Society in Trenton, April 8, Dr. Bernard D. Judovich, Philadelphia, discussed "First Lumbar Neuralgia."—A symposium on the treatment of mental diseases was presented before the Morris County Medical Society in Greystone Park, April 16; speakers were Drs. Laurence M. Collins, Edward I. Kessler, Thomas G. Peacock and Malcolm C. Taylor.—The Bergen County Medical Society held its spring festival at Bergen Pines, the county tuberculosis hospital at Ridgewood, May 13. A program of outdoor sports preceded the scientific meeting, at which speakers included Drs. Oddino Bernardini and William J. Grosfeld of the sanatorium staff, who discussed results of treatment of pulmonary tuberculosis and thoracic surgery, respectively.

### NEW YORK

**Society News.**—The medical societies of Nassau and Westchester counties held their second annual joint dinner meeting and golf tournament, May 26, at the Westchester Country Club, Rye.—Dr. Marion B. Sulzberger, New York, addressed the St. Lawrence County Medical Society, May 21, on "Relationship of Dermatology to General Medicine."

**Scarlet Fever from Raw Milk.**—Seventy-two cases of scarlet fever with one death, which occurred in Wayne County between February 5 and March 3, have been traced to raw milk, *Health News* reported May 4. All cases but one occurred among patrons of a dairy that supplied two thirds of the village of Red Creek with raw milk. Hemolytic streptococci were found in throat cultures from three of the dairyman's children. One cow had a mastitis, and her milk contained hemolytic streptococci. Pasteurization of the milk supply was begun February 28.

### New York City

**Newspaper Bars Physicians and Dentists from Advertising.**—The New York *American* announces that "the advertising of doctors and dentists, as well as other questionable medical advertising," is henceforth barred from its columns. The publishers believe this action will "maintain and further strengthen the ethical standards of both the medical profession and the advertising business."

**Personal.**—Dr. Herbert S. Gasser, director of the Rockefeller Institute for Medical Research, New York, has been elected a corresponding member of the Sociedad Argentina de Biología de Buenos Aires.—Dr. Clarence O. Cheney, who was recently appointed medical director of Bloomingdale Hospital, White Plains, has been appointed professor of clinical psychiatry at Cornell University Medical College and consulting psychiatrist at New York Hospital. Bloomingdale Hospital is associated with Cornell. Dr. Cheney resigned as professor of psychiatry at Columbia University College of Physicians and Surgeons May 1.—Dr. McKen Cattell has been appointed associate professor of pharmacology in charge of the department at Cornell University Medical College.—Dr. Franz Boas, professor of anthropology, Columbia University, since 1899, has been made professor emeritus.

**Award to Dr. Van Slyke.**—The Charles Mickle Fellowship of the University of Toronto has been awarded to Donald D. Van Slyke, Ph.D., member of the Rockefeller Institute for Medical Research, in recognition of his methods of blood analysis, gasometric micro-analysis and his work on respiratory and renal reactions, diabetes and nephritis. This fellowship is the annual income from an endowment fund of \$25,000 and is awarded to the scientist who has, in the opinion of the council of the university, done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science. Dr. Van Slyke received his doctor's degree at the University of Michigan in 1907 and became a fellow in physiologic chemistry at the Rockefeller Institute the same year. He was made a member in 1921. He has been president of the Harvey Society and of the Society of Biological Chemists.

**Antinoise Ordinance Adopted.**—An ordinance prohibiting unnecessary and disturbing noises was adopted by the board of aldermen April 22. The new law prohibits sounding of horns or signal devices on vehicles not in motion and on vehicles in motion except as danger signals. Playing radios or other musical instruments loudly enough to disturb neighbors between 11 p. m. and 7 a. m. is specifically forbidden, as is the keeping of noisy animals and birds. Building or demolition of buildings may not be carried on at night in either business or residential areas except in emergencies, for which the commissioner of buildings must give special permission. Excessive noise on streets where there are hospitals, schools and courts is also banned. Other noises mentioned in the ordinance include the use of vehicles that are unnecessarily noisy because they need repair or are carelessly loaded; noisy unloading or loading of vehicles; blowing of stationary boiler steam whistles except as work or danger signals; operation of any engine without a muffler; bellowing of street hawkers; use of a drum, loud speaker or other noisy device to attract attention to theaters, stores or peddlers, and the use of loud speakers or amplifiers on moving vehicles except by permission of the police department. First offenders are subject to \$1 fine or one day in jail; second offenders to a \$2 fine or two days' imprisonment and so on, to a maximum of a \$10 fine or ten days in jail for five or more offenses. All offenses after the first are counted only if they occur within a year after the first, however.

### NORTH CAROLINA

**University News.**—Dr. Edward R. Baldwin, Saranac Lake, N. Y., addressed the faculty and students of Duke University School of Medicine, Durham, recently, on "The History of Tuberculosis Research in America."

**State Medical Election.**—Dr. Wingate M. Johnson, Winston-Salem, was chosen president-elect of the Medical Society of North Carolina at the annual meeting in Asheville, May 6. Drs. Charles A. Woodard, Wilson, and John F. Brownsberger, Asheville, were elected vice presidents and Dr. Louis B. McBrayer, Southern Pines, reelected secretary. The next meeting will be in Winston-Salem.

### OHIO

**Health Departments Merge.**—The Hocking and Vinton county health departments have merged, forming a new district health department under the supervision of Dr. Walter B. Lacock, health commissioner of Hocking County. This is the first two county setup in the state, it is reported, although cities and counties have been permitted to combine their health services in the past. Dr. Herbert D. Chamberlain, McArthur, who served as health officer of Vinton County, will retire from this post under terms of the merger.

**Personal.**—Dr. George P. Tyler, Ripley, celebrated the fiftieth anniversary of his graduation from the Medical College of Ohio, Cincinnati, March 10.—Dr. Dean H. Minnis, Warrensville, has been appointed superintendent at Pleasant View Sanatorium, Amherst, to succeed Dr. Aaron H. Smith, who recently resigned to return to private practice.—John Uri Lloyd, Cincinnati, one time president of the American Pharmaceutical Association, died in Los Angeles, April 9, aged 85.

**Flood Emergency Program.**—The state department of health reports that flood conditions in the eastern and southern parts of the state caused an emergency in health activities. Dr. Francis E. Mahla, Columbus, assistant director of health, with several members of the state department's staff, went to the flooded district to aid local health commissioners. About 15,000 persons were inoculated against typhoid; 1,251 wells and 689 cisterns were chlorinated; four springs were cleaned and chlorinated. At the time of the report there had been

no case of typhoid directly attributed to flooded wells. A small epidemic resulted from use of a well that was not in the flooded territory but was used because the flood had shut off the regular water supply.

## OREGON

**Committee to Study Treatment of the Insane.**—The state board of control has appointed a committee to study conditions for the treatment of the mentally afflicted, in order that a program of curative and preventive work may be outlined. Dr. Richard B. Dillehunt, dean, University of Oregon Medical School, Portland, is chairman of the committee. The program will be presented at the next session of the legislature.

**Drive Against Venereal Disease.**—A statewide campaign to control venereal disease in Oregon has been instituted under the direction of the state health officer, Dr. Frederick D. Stricker, according to *Northwest Medicine*. Physicians have been requested to cooperate. The law in Oregon requires the reporting of all venereal diseases to the state health department. In the present campaign, persons suspected of having venereal disease may be isolated at the discretion of the local health officer.

## PENNSYLVANIA

**State Radiologists' Meeting.**—The Pennsylvania Radiological Society was to hold its annual meeting in Williamsport, June 5-6. The following speakers, among others, were to appear on the program:

Dr. Gerald D. Bliss, Altoona, Irradiation Treatment of Acute Infections.

Dr. Edgar C. Baker, Youngstown, Ohio, Clinical Parathyroid Function.

Dr. William J. Corcoran, Scranton, Differential Diagnosis of Conditions About the Hip Joint.

Dr. Forrest L. Schumacher, Pittsburgh, Roentgen Study of the Mastoid.

Dr. Eugene P. Pendergrass, Philadelphia, Roentgen Diagnosis of Gall-bladder Disease.

Dr. Peter B. Mulligan, Ashland, Roentgen Study of Genito-Urinary Conditions.

**Society News.**—Dr. William James Gardner, Cleveland, addressed the New Kensington Academy of Medicine in New Kensington, April 20, on "Treatment of the Late Sequelae of Cerebral Trauma."—Dr. Harry A. Duncan, Philadelphia, addressed the Cambria County Medical Society, Johnstown, May 14, on "Office Gynecology."—Drs. Earl D. Osborne, Buffalo, and Henry W. F. Woltman, Rochester, Minn., addressed the Lycoming County Medical Society, Williamsport, May 8, on "Treatment of Syphilis" and "Neuritis" respectively. The guest speakers conducted clinics in the morning at Williamsport Hospital.—Drs. John H. Fager Jr. and Edgar S. Everhart addressed the Dauphin County Medical Society, Harrisburg, in April on "Diagnosis and Treatment of Prostatic Conditions" and "Fever Therapy in Syphilis and Gonorrhea" respectively.—Dr. Emil Novak, Baltimore, addressed the Fayette County Medical Society, Uniontown, May 15, on "Uses and Abuses of Gynecological Organotherapy."

## Philadelphia

**Society News.**—Speakers before the Philadelphia Academy of Surgery, May 4, were Drs. Edward J. Klopp and James M. Surver, on "Cancer of the Colon and Rectum," and Drs. John H. Gibbon Jr. and Edward D. Churchill, "Physiology of Massive Pulmonary Embolism."—Dr. Marshall N. Fulton, Boston, addressed the College of Physicians of Philadelphia, May 6, on "Use of Mercury as a Diuretic" and Drs. Charles C. Wolferth and Alexander Margolies, "Mechanism and Clinical Interpretation of Heart Sounds."—At a meeting of the Obstetrical Society of Philadelphia, May 7, speakers were Drs. Spencer Leon Israel, on "Ovarian Rupture Causing Intra-peritoneal Hemorrhage"; George M. Laws, "Spina Bifida Occulta, with Special Reference to Uterine Prolapse," and George A. Ulrich, "Use of Internal Podalic Version in Obstetrics."—Among speakers before the Philadelphia Roentgen Ray Society, May 7, were Drs. John T. Farrell Jr., on "Primary and Metastatic Pulmonary Malignancy"; Russel F. Miller, "A Roentgenologic Study of Sympathicoblastoma" and Bernard P. Widmann, "A Radiologic Conception of the Reticulo-Endothelial System."—Dr. Disraeli W. Kobak, Chicago, addressed the Philadelphia County Medical Society, May 27, on "Influence of Short Wave Radiation on Constituents of the Blood," and Drs. Eugene M. Landis and Lewis H. Hitzrot, on "Evaluation of Suction Pressure in Peripheral Vascular Disease."—Dr. Temple Fay discussed the mechanism of headache and Drs. Francis C. Grant and Robert A. Groff, tumors of the tuberculum sellae at the meeting of the Philadelphia Neurological Society, May 22.—At a meeting of the Metabolic Association of Philadelphia, May 22, Dr. Irvine H. Page,

New York, discussed arteriosclerosis and hypertension, and Dr. Virgil H. Moon, pathologic and general considerations of arteriosclerosis.

## SOUTH CAROLINA

**New Health Officers.**—Several new health officers for counties and districts have recently been appointed, according to newspaper reports. They include the following:

Dr. Gordon R. Westrope, Columbia, to Cherokee County.  
Dr. John Y. O'Daniel, Erwin, Tenn., to Marlboro County.  
Dr. George Fletcher Reeves, Goldsboro, N. C., to Colleton County.  
Dr. Edward P. White, Gaffney, to Richland County.  
Dr. William Burns Jones, Columbia, to Chester and Union counties.  
Dr. Thomas B. Phinizy, Augusta, Ga., to Bamberg, Allendale and Barnwell counties.

## TEXAS

**Personal.**—Dr. Bernhard E. Knolle, Industry, was recently the guest of honor at a barbecue at the Brenham Country Club celebrating his fiftieth anniversary in the practice of medicine. Dr. Knolle's sons, Drs. Waldo A. and Roger E. Knolle, were hosts and Dr. Richard E. Nicholson was toastmaster.—Dr. Edythe P. Hershey, director of health in the Dallas public schools, has been appointed director of the child health and maternity divisions of the state health department, it is reported.—Dr. Robert J. Jaehne, Austin, was recently named health officer of Travis County, it is reported.—Dr. Charles S. Carter, Bells, has been appointed to the board of medical examiners to succeed the late Dr. Marquis E. Daniel, Honey Grove.

## UTAH

**Society News.**—The Salt Lake County Medical Society has recently created a speakers' bureau to supply authoritative speakers in response to requests from lay groups and to give radio talks when the opportunity may arise. Dr. Edward S. Pomeroy is chairman of the bureau.—Drs. Leland R. Cowan and Ozra J. LaBarge, Salt Lake City, addressed the Central Utah Medical Society at Mount Pleasant, April 1.—Dr. Lewis Weston Oaks, Provo, addressed the Utah County Medical Society in April on allergy.—The council of the Utah State Medical Association visited the Cache Valley Medical Society, recently. Dr. William R. Tyndale, Salt Lake City, president of the state association, made an address on amebiasis; Dr. Louis E. Viko, Salt Lake City, president-elect, spoke on medical economics, and others discussed organization problems.

## VIRGINIA

**Pediatric Society Meeting.**—The annual clinic of the Virginia Pediatric Society was held at the Medical College of Virginia, Richmond, May 29. The program included a symposium on disorders of the respiratory tract, a clinical-pathologic discussion of pediatric cases and an address by Dr. Albert Compton Broders, Richmond, on "Malignancy in Children."

**New Health Officers.**—Dr. Mack I. Shanholtz, Beckley, W. Va., has been appointed director of the health district comprising Bristol and Washington counties, with headquarters at Bristol. Dr. Charles L. Savage, Charlottesville, has been appointed director of the Buchanan-Russell-Tazewell Health District, with headquarters at Richlands. Dr. John B. H. Bonner, Beaumont, was appointed director of the Sussex County Health District in April, with headquarters at Stony Creek.

## GENERAL

**Conference on Teaching of Psychiatry.**—The fourth conference on psychiatric education called by the division of psychiatric education of the National Committee for Mental Hygiene was held at Phipps Clinic, Baltimore, under the chairmanship of Dr. Adolf Meyer, director of the clinic, April 8-10. Thirty-eight medical schools were represented by 110 teachers of psychiatry. Discussions centered around types of teaching organization, especially the content of undergraduate courses; opportunities for teaching in state hospitals, consultation work, outpatient work, child guidance and social service and other fields.

**Dr. Wheeler Awarded Dana Medal.**—Dr. John M. Wheeler, professor of ophthalmology, Columbia University College of Physicians and Surgeons and director of the Institute of Ophthalmology at the Columbia-Presbyterian Medical Center, New York, was presented with the Leslie Dana gold medal for "outstanding achievements in the prevention of blindness and the conservation of vision" at a dinner in his honor in St. Louis, May 9. Dr. Wheeler was selected for the award by the National Society for the Prevention of Blindness in cooperation with the St. Louis Society for the Blind, which offers the prize



annually. Dr. Wheeler graduated from the University of Vermont School of Medicine in 1905. He has held his positions with Columbia and Presbyterian since 1928 and in 1934 was president of the American Academy of Ophthalmology and Oto-Laryngology.

**Association for Study of Goiter.**—The annual meeting of the American Association for the Study of Goiter will be held at the Drake Hotel, Chicago, June 8-10. Speakers will include the following physicians:

James B. Collip, Montreal, Canada.  
Jacob Lerman and William T. Salter, Boston, Role of Natural and Artificial Thyroid Proteins.  
John de J. Pemberton, Rochester, Hyperthyroid Reactions.  
Frederick A. Collier and Walter G. Maddock, Ann Arbor, Mich., Liver Function in Relation to Hyperthyroidism.  
James H. Hutton, Chicago, Response of Exophthalmic Goiter or Graves' Disease to Irradiation of the Pituitary and Adrenals.  
Arthur E. Hertzler, Halstead, Kan., End Results of Total Ectomies in Interstitial Goiters, Cardiotoxic States and Spontaneous Myxedema.

Tuesday morning clinics will be held at Augustana, Cook County and Presbyterian hospitals. The annual dinner will be addressed by Dr. Julius R. Yung, Terre Haute, Ind., president of the association, and Gordon Jennings Laing, LL.D., dean of the division of humanities, University of Chicago.

**Medical Bills in Congress.**—*Changes in Status:* H. R. 12374 has been reported to the House, proposing to authorize the President to provide employment for unemployed citizens of the United States to discover and develop the mineral resources, and to provide medical care and hospitalization for such persons. H. R. 12793 has been reported to the House, proposing, among other things, to amend the Harrison Narcotic Act so as to provide for the registration of persons using narcotics in a laboratory for the purposes of research, instruction or analysis and to impose a special tax on such registrants of \$1 per annum. *Bills Introduced:* H. R. 12839, introduced (by request) by Representative Bacon, New York, proposes to extend the status of veterans of the World War to persons enlisted and serving in war zones on United States Shipping Board vessels during the World War. H. R. 12890, introduced by Representative Colmer, Mississippi, proposes to extend the benefits for veterans of the Spanish-American War, including the Philippine Insurrection and the China Relief Expedition, to contract veterinarians.

**Meeting of Association for Advancement of Science.**—The section on medical sciences (N) of the American Association for the Advancement of Science will meet during the annual session of the parent organization, June 16-18, in Rochester, N. Y. The remainder of the meeting of the national society will be held in Ithaca. The main feature of the program of the section will be a memorial session in honor of Dr. Theobald Smith. This session, a joint one with the Central New York Branch of the Society of American Bacteriologists, will be opened with an address by Simon Henry Gage of Cornell University, entitled "Theobald Smith: Investigator and Man." A joint meeting will also be held with the Western New York Branch of the Society of Experimental Biology and Medicine. Speakers to appear on the two day program of the section will include:

Rudolph J. Anderson, Ph.D., New Haven, Chemical Studies on Wax Fractions of the Tubercle Bacillus.  
Dr. Augustus B. Wadsworth, Albany, Practical Problems in the Serum Test of Bacterial Infections.  
Dr. George P. Berry and Helen M. Dedrick, A.B., Rochester, Transformation of the Virus of Rabbit Fibroma (Shope) into That of Infectious Myxomatosis (Sanarelli).  
Dr. I. Newton Kugelmass, New York, Modifying Milk for Infants' Digestion.

**Society News.**—Dr. Mabel M. Akin, Portland, Ore., was chosen president-elect of the Medical Women's National Association at the annual meeting in Kansas City, May 11, and Dr. Catharine Macfarlane, Philadelphia, was installed as president. Other officers elected were Drs. Olga F. Stastny, Omaha, Marie E. Esmond, Kansas City, and Lillian C. Irwin, Seattle, vice presidents, and Dr. Julia Faith Skinner Fetterman, Philadelphia, secretary. At the fifth annual meeting of the Harvey Cushing Society in Rochester, Minn., May 15-16, Dr. Kenneth G. McKenzie, Toronto, was chosen president; Dr. Richard Meagher, New York, vice president, and Dr. Louise C. Eisenhardt, New Haven, secretary. Dr. Ernest Sachs, St. Louis, was chosen an honorary member. The next annual meeting will be held in Philadelphia. Dr. Thomas R. Boggs, Baltimore, was elected president of the Association of American Physicians at its annual meeting in Atlantic City, May 6; Dr. George R. Minot, Boston, was made vice president and Dr. Hugh J. Morgan, Nashville, Tenn., secretary.

**Fraudulent Instrument Repair Man.**—Numerous complaints have been received from physicians in North Carolina, Virginia and Tennessee describing an impostor who has been

soliciting work in repairing and replating surgical instruments. In North Carolina the name of the man was reported to be Postly, representing "Postly and Company," supposedly of Knoxville, Tenn. From a number of physicians he obtained instruments to be repaired, saying that his firm had a branch in Atlanta managed by his brother. The victims paid him in advance 25 cents per instrument. When the instruments were not returned within a reasonable length of time, they wrote to Atlanta and to Knoxville. Letters to Atlanta were returned, but those sent to Knoxville did not come back to the writers. Inquiries of the Knoxville postoffice revealed that Postly had mail addressed to 118 Market Street, a nonexistent street number, but received it through general delivery. The North Carolina physicians described the man as about 50 years old, of slight build and average height, not well dressed. Letters from Virginia and Tennessee tell a similar story except that the name used was Hinton and the firm "Hinton and Company," alleged to be in Louisville, Ky. They describe the man as about 50 years old, weighing about 150 pounds, 5 feet 10 inches tall, wearing glasses. One report said that his lenses are both minus 4, rimless, octagonal; that he has gray eyes and sandy hair, thin on top, and that he talks well and is interested in Egyptology. The chief of police in Louisville advised that there is no Hinton and Company at 518 South Fourth Street and no such name in the city directory.

## CANADA

**Public Health Organizations Hold Joint Meeting.**—The State and Provincial Health Authorities of North America, the Canadian Public Health Association, the Western Branch of the American Public Health Association, the Canadian Tuberculosis Association and the British Columbia Public Health Association will meet in Vancouver, B. C., June 22-27. The various groups will hold separate meetings for the most part, but there will be a general session Wednesday morning, June 24, at which the presidents of the various organizations will give their official addresses. This session will be followed by a luncheon at which speakers will be Drs. Thomas Parran, surgeon general of the U. S. Public Health Service, Washington, D. C., and John J. Heagerty, chief executive assistant, department of pensions and national health, Ottawa. The same evening there will be a public meeting, at which speakers will be the Hon. D. Pattullo, premier of British Columbia; George M. Weir, provincial secretary and minister of health of British Columbia, and Dr. Hugh A. Farris, St. John, N. B. Drs. Stanley H. Osborn, Hartford, Conn., and John G. Fitzgerald, Toronto, will speak at a joint luncheon Thursday, June 25.

## FOREIGN

**Summer School in Psychology.**—The fifth annual summer school in psychology at the University of Vienna Psychological Institute for English-speaking students will be conducted July 13-August 8. Information may be obtained from Henry Beaumont, Ph.D., department of psychology, University of Kentucky, Lexington, or directly from Egon Brunswik, at the psychologic institute, Liebiggasse 5, Vienna 1, Austria.

**New Medical Institute in Australia.**—The Australian government and the University of Adelaide are collaborating in the establishment of an Institute of Medical Science, it is reported. The government is contributing £15,000 to match a similar amount privately subscribed. Dr. Edward Weston Hurst, who is a member of the Lister Institute and reader in pathology at the University of London, has been appointed by the Australian government as director of the institute.

**Personal.**—Prof. Herbert H. Woollard, since 1929 professor of anatomy at St. Bartholomew's Hospital Medical College, has been appointed to the university chair of anatomy tenable at University College. Sir Patrick Laidlaw has been appointed by the British Medical Research Council to be deputy director of the National Institute for Medical Research and head of the department of pathology and bacteriology. The Cross of Officer of the Legion of Honor has been conferred on Sir Henry Wellcome, London, by the president of the French Republic.

## CORRECTION

**Outbreak of Epidemic Jaundice.**—The article by Willett, Sigoloff and Pfau entitled "An Institutional Outbreak of Epidemic Jaundice," in THE JOURNAL, May 9, was indexed on the inside cover page of that issue as "jaundice, epidemic, traced to holy water fonts." The index reference is misleading in that the relationship of the Leptospira found in the water to the dissemination of the outbreak could not be ascertained.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 18, 1936.

#### Some Schools Closed for Want of Children

The continual fall in the English birth rate has become a commonplace, but it is realized only by statisticians that it has for some time been below the level necessary for the reproduction of the present population, so that a decline, slow at first but more rapid after twenty years, is a necessary result of the present birth rate. A profound change has already taken place in the age constitution of the English population. While the birth rate has been falling, improved sanitation has prolonged life, with the result that the proportion of old persons in the population has increased and the proportion of children diminished. In 1901, 11.4 per cent of the population of England and Wales were children under 5 years of age and 10.6 per cent were persons over 55. By 1911 the percentage of children had fallen to 10.7 and of those over 55 years of age had increased to 11.6. The estimate for 1928 was 8 per cent of children under 5 years and 15.8 per cent of persons over 55 years. It is estimated that, by 1941, 7.5 per cent of the population will be children and more than 19 per cent persons over 55. The fall in the number of children is revealed by startling figures just published by the London County Council, which has had to close some of its schools. In the year 1914-1915 there were 727,052 children in these schools. In the present year there are only 510,000 and it is estimated that in 1936-1937 the number will fall to 475,000, a reduction of nearly 30 per cent in twenty-two years.

The fall in the birth rate began about sixty years ago and has since steadily progressed. In the decade 1871-1880 the average annual rate was 35.4 per thousand of population, and in the successive decades 32.4, 29.9, 27.2 and 21.8. After that the rates for individual years are available. Omitting the years in which considerable disturbance was produced by the war, from 1922 to 1927 the rates were 20.4, 19.7, 18.8, 18.3, 17.8 and 16.6. Thus in 1926 the rate was 17.8, almost exactly half what it was fifty years ago. In 1933 the birth rate reached its lowest point, 14.4, and was so near the death rate that the net increase of population was only 2.1 per thousand. From the beginning of the nineteenth century until the great war the population of England increased by 12.5 per thousand annually, a rate greater than that of any other country in Europe. From 1914 to 1924 the annual increase was only 4.7 and from 1924 to 1934 it was 4.4. The fall in the first period was due to high war mortality and decrease of fertility; in the second period, to further decrease of fertility.

But all these figures do not reveal the seriousness of the position. A slight increase of population still exists. What few people realize is that, while a population may increase for some time, its fertility may already be reduced to a level which means, if unchanged, ultimate extinction. This has occurred in England. To understand the position, recourse must be had to a new index of population growth, introduced by Kuczynski and termed "the net reproduction rate." This is defined as the average number of females that will be born to every new-born girl. It can easily be calculated on the assumption that the fertility and death rates of a particular year continue and so continue to be applicable to the life of the girls born in that year. If the average number of girls born to every new-born girl is one, each will be replaced by another in the next generation, and the population will remain stationary. If the average number is less than one, the population will decrease. Now the net reproduction rate of England and Wales for 1933 is

0.734. If the present rates are maintained, there will be in the next generation only about three fourths of the present number of new-born girls, and this reduction will be repeated in the succeeding generations.

An exhaustive study of the effect of the present trends in fertility and mortality on the future population of England and Wales, by Dr. Enid Charles, has been published by the London and Cambridge Economic Service. She points out that, if the present rates continue, the extinction of the population is only a matter of time. To forecast what will actually occur, she considers three hypotheses: (1) that the fertility and mortality rates continue as in 1933; (2) that the recent fall in these rates will continue; (3) that mortality continues to fall and that fertility remains constant at the 1931 level. According to the first hypothesis a decline in population will begin in 1943; according to the second, in 1939; according to the third, between 1960 and 1965. But there will be no spectacular change before twenty years has elapsed. Thereafter the fall will be rapid on any assumption that seems plausible in the light of experience. According to the first hypothesis the population will be halved a century hence; according to the second, it will be reduced to one tenth; according to the third, to about four fifths.

#### The Campaign Against Noise

The campaign against noise goes on. The claim is now made that London possesses the only hotel in Europe which is noise proof and air conditioned. Double windows, set in continuous heavy steel frames, exclude all noise. By a ventilating system fresh air, cleaned and maintained at an equable temperature, enters and is withdrawn through vents at floor level. In regard to these improvements Lord Horder, chairman of the Anti-Noise League, said that noise is going "to do us in" unless we do something about it. Modern life was full of stresses and strains, and it was essential to do everything possible to absorb unnecessary and provocative noise. The modern machine that we had devised would overcome us unless we controlled it.

The noise of aircraft is also receiving attention. The Anti-Noise League has been in communication with the Air Ministry and the Aeronautical Research Committee with regard to complaints received by it, mostly in connection with civil flying and particularly training and taxi aircraft. In a letter to the Secretary of State for Air, the league stated that widespread suffering was caused by low flying. The work in hospitals has been interfered with and annoyance has been caused during a funeral service. To the Aeronautical Research Committee it was suggested that airplanes on short flights should be required to have silencers affixed to their engines. The Air Ministry is taking cooperative action with the operating companies with view to reducing the evil.

#### New X-Ray Apparatus

A new x-ray apparatus which marks an important advance in technic has been installed at two London hospitals—St. George's and Brompton. By it roentgenograms of remarkably clear definition may be taken with an exposure of one-thirtieth second. Ordinary stationary apparatus requires exposures of at least one-tenth second and portable apparatus one of at least two seconds. The new instrument is portable. The inventor is Dr. A. Bouwers of Eindhoven, Holland. It has the advantage that it may be operated from the electric mains.

#### The Exploitation of the Deaf

The National Institute for the Deaf has issued a booklet on the exploitation of the deaf. The object is not to discourage the use of mechanical or electrical aids to hearing or to limit their sale by reputable firms but to draw attention to the extravagant and unjustifiable claims made for extensively advertised appliances. Inquirers in ever increasing numbers

report to the institute unscrupulous misrepresentation. The institute advises the deaf to consult an ear specialist, either privately or at a hospital, as to whether an aid is required. They are warned against advertisements which promise perfect hearing irrespective of the cause, degree of deafness or age of the sufferer. They are advised to sign no contract without having read it carefully and to avoid firms that do not allow for an adequate trial of any aid.

## PARIS

(From Our Regular Correspondent)

April 28, 1936.

### Tubercle Bacilli in Gastric Contents in Children

At the January 24 meeting of the Société médicale des hôpitaux, Debré, Saenz, Broca and Costil emphasized that although it is not difficult to find tubercle bacilli in the stomach contents, the method is not so frequently employed as it deserves to be. The two methods recommended in the search for tubercle bacilli are the culture methods and animal inoculation. The sources of error are virtually negligible, as their experience has shown. In twenty-one cases of frank pulmonary lesions, as well as in tuberculous bronchopneumonia and miliary tuberculosis, the tubercle bacilli were found by culture or animal inoculation. In nontuberculous pulmonary lesions occurring in children, with positive skin reactions, the examination of the gastric contents for tubercle bacilli was negative in eleven cases. In ten cases of incipient pulmonary tuberculosis, there were six positive results. These six positive cases are of special interest because the physical examination was negative and in three of these six there was an absence of cough.

In twelve cases of erythema nodosum there were nine positive results; i. e., tubercle bacilli were found in the gastric contents. In seven of the nine positive cases the radiographic examination revealed an initial pulmonary focus. Debré, Saenz, Broca and Costil stated that the search for tubercle bacilli in the gastric contents is a method of diagnosis which deserves to be used in children as well as in adults who do not have any expectoration. The method is especially indicated in erythema nodosum, tuberculous meningitis, miliary tuberculosis and incipient tuberculosis. It is useful in cases in which the exposure to a tuberculous infection dates back only three or four months; i. e. before a tuberculin reaction can be expected to be positive.

A second paper by Lesné, Saenz, Dreyfus-Sée, Launay and Salambiez gave the results of the search by culture or animal inoculation for tubercle bacilli in the gastric contents in thirty-five children. In two thirds of the cases the tubercle bacilli were found in the gastric contents. Children below the age of 3 years seldom cough or expectorate; hence finding the bacilli by culture or inoculation in the gastric contents is of great diagnostic importance. All children below the age of 3 who show positive skin reactions should be isolated, because frequently toys or spoons become contaminated by tubercle bacilli in the saliva or nasopharyngeal secretions, as has been shown by Lesné and Langle in 70 per cent of tuberculous infants. Every institution that cares for children ought to separate those less than 3 years of age having positive from those having negative skin reactions.

A single examination of the gastric contents, either by culture or by animal inoculation, has sufficed to yield a positive result in every case of primary infection. Stained specimens of the gastric contents have been negative, although such children will occasionally show a few bacilli on staining of the sputum.

The recent advances in the clinical and radiologic diagnosis of such cases of primary infection in children makes it obligatory to separate these children in families, schools and sanatoriums from those who are in a receptive condition. Children

with primary infection should not be exposed to the dangers of superinfection which a stay in a sanatorium, where there are patients with cavities and whose expectoration contains many bacilli, would involve. Hence these children with primary infection constitute a special group who on the one hand must be prevented from infecting healthy children and, on the other, protected against additional infection by the more severely affected. These primary cases should be excluded from institutions receiving children with negative skin reaction, who are particularly susceptible to infection. Children with a positive reaction who do present either radiologic or clinical evidence and whose gastric secretions do not reveal the presence of bacilli can as in the past be considered noncontagious. They cannot be excluded from institutions receiving children with negative skin reactions.

In the discussion, Armand-Delille stated that his observations confirmed those cited by the authors of both papers.

Rist emphasized the value of examination of the gastric contents, in adults, for tubercle bacilli. One can readily follow the course of a case of pulmonary tuberculosis and thus determine its cure, by repeated examination of the gastric contents.

At the January 31 meeting, Armand-Delille read a paper on the same subject. His results were as follows: In fifty-two cases of the ulcerative type of pulmonary tuberculosis, fifty-two (100 per cent) positive results. In fifty cases of the infiltrating type of pulmonary tuberculosis, fifty-eight, or 76 per cent, positive results. In seventeen cases of miliary pulmonary tuberculosis, nine, or 53 per cent, positive results. In primary infection of infants, twenty-two, or 52 per cent, positive results. On the other hand, of 185 children sent for diagnosis who gave normal radiographic results and of whom 150 had positive skin reactions, the gastric contents were positive in only one. Armand-Delille praised the work of Saenz and Costil of the Pasteur Institute in developing the technic of the culture method for finding tubercle bacilli.

The search for tubercle bacilli in the gastric contents of children has been the subject of papers read in recent months before various societies in Paris. The latest of these was by Armand-Delille and Kerambrum at the March 10 meeting of the Académie de médecine. They have employed the Meunier method since 1927, in conjunction with homogenization as suggested by Bezançon and Philibert as a diagnostic resource in children and in certain adults, especially in young women when there is little expectoration. In 1,300 children there were 96.4 per cent positive results in pulmonary tuberculosis with cavity formation and 13.5 per cent positive results in serofibrinous pleurisy without demonstrable involvement of the lung itself. In cases suggestive of pulmonary tuberculosis but in which the stained sputum specimens were negative, there were seventeen positive and fourteen negative results on inoculating guinea-pigs with the gastric contents. Cultures on the Petroff medium have not given satisfactory results. With the Loewenstein or Petragani mediums in eleven cases, the guinea-pig and culture were both positive in two of these eleven cases, whereas in four of the eleven the culture was positive but the guinea-pig inoculation was negative. In five of the eleven, the guinea-pig test was positive and the culture negative. In 586 cases in which expectoration and physical signs were positive but roentgen examination was negative, the examination of the gastric contents was positive in only three.

### Bone Graft to Increase Diameter of Contracted Pelvis

A report of eight cases in which a contracted pelvis was enlarged by bone grafts following symphysiotomy, with one normal delivery already recorded, was made at the March 17 meeting of the Académie de médecine by Yves Delagénière of Mans. In October 1933 six cases were reported at the French Surgical Congress, in which a definite enlargement of

the pelvis followed the insertion of osteoperiosteal grafts placed in the interspace between the pubic rami, a few weeks after symphysiotomy had been performed. Since this first communication, two additional operations have been performed. In his present paper he reports one of the more recent successful cases. A primipara, aged 19 years, was admitted to the maternity, Oct. 19, 1934. The bag of waters had ruptured and labor had begun four days previously. Delivery with the aid of forceps had been attempted but the head was arrested above the pelvic inlet. As the anteroposterior diameter was only 8.5 cm., Delagénière decided to perform a symphysiotomy. A separation of about 3.5 cm. having been attained, forceps were applied and a living child weighing 2,500 Gm. (about 5 pounds) was delivered. A phlebitis as a puerperal complication necessitated sending the patient home for two months before attempting the insertion of osteoperiosteal grafts in the space between the two pubic bones. Two grafts each 7 cm. in length and 1.5 cm. in width were taken from the right tibia and inserted transversely in a 4 cm. wide interval corresponding to the former pubic symphysis. The patient returned home and the plaster cast was removed six weeks after the operation. She returned in December 1935 stating that she was eight months pregnant. The anteroposterior diameter measured 10.5 cm. Early in February 1936 a normal delivery lasting only three hours occurred. The child weighed  $6\frac{1}{2}$  pounds (about 3 Kg.). Examination of the eight patients operated by Delagénière revealed a separation of 3.5 cm. at the pubic symphysis without any complaints on walking or standing. As to the time at which the bone grafting should be performed, this can be done from ten to fifteen days after the symphysiotomy provided the temperature during the puerperium has not risen above 38 C. (100 F.); otherwise it is advisable to wait for two months. Following the bone grafting to enlarge the interpubic space, the patient should be kept in bed for six or eight weeks without any cast unless the interspace is more than 3.5 cm., when a light plaster girdle is advisable.

### BERLIN

(From Our Regular Correspondent)

April 15, 1936.

#### The Health of Applicants for Marriage Loans

The new policy of marriage loans has given rise to many medical questions, which have now in part been answered. The first comprehensive statistical report on the health of applicants for marriage aid has recently been published by the hereditary and racial hygiene section of the national bureau of health. This survey covers the year from July 1, 1934, to June 30, 1935. During this period there were received at the national bureau of health, where all such material is centralized, a total of 333,776 applications. Of this number, 97.28 per cent were considered acceptable; 2.72 per cent of the applications, however, were rejected on medical grounds. Noteworthy is the classification of the grounds for rejection under three main heads. The figures are as follows: Of the 27.2 per thousand rejected, 18.3, that is, two thirds of the total number, were rejected as afflicted with hereditary or acquired disease; a further 5.9, that is, about two ninths of the total number of rejections, were based on hereditary taint although the rejected were healthy phenotypes, and a final 2.9, forming one ninth of the total, were rejected because of the unfitness of the prospective marriage partner. Rejected applicants in the last named group receive a certification of fitness when and if they select another and healthier marriage partner. These figures are generally constant for the various political divisions of Germany as well as for the seasons of the year. There were in all 4,255 male and 4,810 female applicants rejected during the period covered by the report, a ratio of 100 males to each 113 females.

More than half (51.38 per cent) of all the rejections were based on congenital feeble-mindedness. Other hereditary diseases coming within the scope of the legislation, with their percental proportions to the total number of rejections, were schizophrenia 5.95 per cent, epilepsy 4.29, inherited bodily deformity 3.62, hereditary blindness and other visual disturbances 1.16, manic depressive insanity 1.06. Further may be mentioned alcoholism and other additions 1.39 per cent, psychopathic disorders 4.5, diabetes 1.11, diseases of the heart and blood vessels 2.37, nervous disorders 1.54, tuberculosis 5.49, suggestive type tuberculosis 1.67, syphilis 5.33, gonorrhea 1.58, sterility or incapacity for bearing children 2.64 and, finally, other conditions endangering a fruitful marriage 1.25 per cent. All others listed under particular specified diseases amount to less than 1 per cent. Criminality, for example, accounts for 0.62 per cent.

In 81.9 per cent of cases involving feeble-mindedness the applicants presented the congenital defect, while in 18.1 per cent of the cases the applicants were healthy phenotypes with defective heredity. Likewise in cases involving hereditary bodily deformities and psychopathic states the first category, that of the diseased phenotypes, preponderates; among the cases involving deformity the ratio is 87.7 per cent diseased phenotypes: 12.3 per cent healthy phenotypes; among cases involving psychopathic states the corresponding ratio is 75.3 per cent: 24.7 per cent. On the other hand, certain hereditary disorders show a preponderance of healthy phenotypes among the rejected; thus, schizophrenia 93.8 per cent healthy phenotypes, hereditary epilepsy 84 per cent healthy phenotypes, alcoholism 76.4 per cent healthy phenotypes to 23.6 alcohol addicts.

There is still a final subheading called "Uncertain Disease Conditions and Other Grounds for Rejection." Of the 134 persons included in the group, 12.68 per cent presented "unfavorable coincidences of minor defects" and 44.78 per cent were rejected on nonmedical grounds (racial extraction and political untrustworthiness, for example).

Persons rejected because of the unsuitability of the prospective marriage partner are considered as a separate class. There were 1,025 such rejections, representing 11.3 per cent of the total number.

This survey is of unique interest as the first of its kind. Whether or not these figures will remain constant when compared with data for longer periods of time cannot be foretold.

The number of marriage loans granted from August 1933 to the end of 1935 was 523,000 according to the most recent calculations of the national bureau of statistics (*THE JOURNAL*, Dec. 14, 1935, p. 1999). The law stipulates that for each child born a reduction of the principal of the debt shall be made; such partial remission of the obligation was made in 298,631 cases during the same period. In the year 1935 alone 156,788 marriage loans were repaid, the number of discounts for living births amounting to 155,060.

#### Voluntary Castration

A decree has just been issued by the minister of the interior and the minister of justice which seeks to regulate the question of voluntary castration. It applies to men who are guilty of crimes and misdemeanors imputable to degenerate sexual impulses. Such cases might involve homosexuality, for example, as well as such offenses as sodomy, indecent liberties with children, rape and exhibitionism. Persons may be castrated on their own consent when judicial opinion and forensic medical opinion concur in the advisability of this measure. The purpose of castration is to free the offender from the degenerate sexual impulse which it is feared would otherwise lead to the perpetration of further acts of a similar nature. Whether in a given case the official medical examiner will discuss with

the accused the question of voluntary castration or whether such discussion takes place only if the accused himself has expressed a willingness to be castrated will be determined according to the merits of the individual case. Since the organism is seriously affected both physically and psychically by castration, a careful examination must precede any such intervention. A written declaration must be submitted by the person involved, which may subsequently be withdrawn by him at any time. It is explicitly pointed out that the voluntary nature of the request must not be impaired by any suggestion of compulsion either direct or indirect. It is further expressly forbidden that a suspension of sentence be made in any way contingent on the offender's willingness to undergo castration. On the other hand, there is nothing in the law to prevent the granting of a suspension of sentence in these cases if the court has reason to believe that the future law-abiding conduct of the offender is guaranteed.

## NETHERLANDS

(From Our Regular Correspondent)

April 24, 1936

### The Development of Mental Hygiene

A report by Dr. E. F. Meyers on "The Development of Mental Hygiene" has been submitted to the International Bureau of Public Hygiene. Mental hygiene should remain the province of the physician. This report contains some valuable data. Jan. 1, 1935, the total population of the Netherlands was around 8,392,000, among whom were 23,700 insane persons undergoing asylum treatment either wholly or partly at governmental expense. Expenditures for this purpose amount to some 18,000,000 florins per annum. The number of persons with mental disorders committed for treatment has shown a steady increase independent of the growth of the population as a whole. This is demonstrated by the following table from the official report of inspection:

Year	Population of the Netherlands	Population of Asylums and Psychiatric Institutes	Percentual Proportion per 10,000 Inhabitants
1919	6,831,231	15,894	23.3
1925	7,416,418	19,065	25.7
1930	7,920,388	22,178	28.0

There are now forty-three institutions for the insane within the kingdom, of which eighteen are under nonsectarian auspices while the remainder are largely reserved for Protestants or Roman Catholics. One establishment is operated exclusively for Jewish patients. The most important organization, especially with regard to the "after-care" of nervous mental patients, is the central society, which has twenty-two branch dispensaries distributed throughout the kingdom. At the head of each of these stations is a psychiatrist assisted by a nurse, who handles the social case work. With regard to feeble-minded children, it is admitted that 2 per cent of the kingdom's school children must be placed in institutions which are termed 'schools of special instruction'. There are thirty-eight such schools located in as many communes. Of this number twenty-seven are designated as nonsectarian, while eleven have sectarian affiliations. The population of these thirty-eight schools is at present 9,024. In addition there are thirteen boarding schools furnishing special instruction for feeble-minded children. Five of these schools are conducted by psychiatric institutes. There are two pedagogic institutes in the kingdom, one connected with the University of Amsterdam (Protestant) and the other with the University of Nimeguen (Roman Catholic).

Prophylactic measures against mental disorders may resolve themselves into such activities as the campaigns against alcoholism and syphilis, but most important of all are those systematic eugenic measures dictated by our knowledge of hereditary mental disease. Among all the patients treated, the

disorder could be traced to alcoholism in 13 per cent of the men and 3 per cent of the women, and to syphilis in 13 per cent of the men and 7 per cent of the women.

## Arsine Intoxication

Mr. Hult and Dr. A. Vos reported in the *Geneeskundig Tijdschrift der Rijksverzekeringbank* all the cases of arsine poisoning that have occurred in the zinc oxide factories of the Netherlands. They cite two groups of cases. In the first, six workmen were taken ill, one fatally, while on duty in a plant where zinc dust stored in special vats was converted into zinc sulfate. This process entailed the generation of hydrogen and of arsenic and the gases emanating from the vats, instead of being carried off by the wooden flues intended for that purpose, leaked out into the premises. In the second instance the workroom had been ordered kept open at all times but through the carelessness of one of the men a leakage took place which permitted the noxious gas to invade the premises. The hospital physician noted that the patients complained of itching on the hands and fingers. Diagnosis can be quickly established by the patients' reddish urine, which contains hemoglobin and methemoglobin. The arsine is transformed to colloidal arsenic by the oxidized hemoglobin. The liver produces a large quantity of obstructive bile, which gives rise to icterus. The cyanogen and jaundice impart a peculiar hue to the epidermis, so that the patient resembles an Indian. Physicians are compelled by law to report all cases of arsine poisoning to some competent authority.

## ITALY

(From Our Regular Correspondent)

April 7, 1936

### Reunion of Gastro-Enterologists

The first reunion of the Società italiana di gastro enterologia took place recently at the University of Rome, under the chairmanship of Prof. Cesare Frugoni of Rome. Professor Baglioni, director of the Scuola di Fisiologia of Rome, spoke on the metabolism of alcohol. Microdeterminations of alcoholemia have proved the presence of a small but determinable quantity of alcohol in the blood of sober persons during fasting (about 0.005 Gm. of alcohol per thousand cubic centimeters of blood). This fact indicates that alcohol is not a heterogeneous substance to the human body. The results of the studies of the curve of alcoholemia proved also that there is more alcohol in the blood following drinking on an empty stomach than following it together or after a meal. Seriani investigated the variations of alcoholemia in several experimental conditions. He found also that, when the functions of the liver are impaired, the curve of alcoholemia which follows drinking during or after a meal is not lower than that which follows drinking in the same person on an empty stomach. An analogous behavior is followed by the alcoholemic curve of patients suffering from diabetes mellitus. Insulin fails also to lower the alcoholemic curve in patients with diabetes although it retains the hypoglycemic action on the blood. Histamine, which produces a lowering of the alcoholemic curve when administered to normal persons, fails to change the curve of patients suffering from gastric achylia. The same is the case with the administration of sodium dehydrocholate (decholin), a stimulative substance for the functions of the liver, when given to patients suffering from grave liver diseases. The results of the studies carried on by Baglioni and his school are showing the possibility of applying this knowledge to the clinical and physiologic fields. A first and important application is that of the comparative study of the curve of alcoholemia during fasting and after a meal (Seriani-Lolli's test for functions of the liver), which has proved to be of value in the interpretation of certain hepatic syndromes.

Professor Alessandrini spoke on diabetic polyneuritis. After reviewing the relations between diabetes and the reserves of vitamins and also between insulin and vitamin B, the speaker discussed the possibility of the development of frustate forms of vitaminosis B in diabetes, as a result both of the limitations of food and of the pathologic conditions of the organs concerned with digestion in the diabetic. It results, from recent investigations of several authors, that the daily need of vitamin B is in direct relation to the individual alimentary habits and that persons who habitually take into their system a certain amount of the vitamin lose the faculty of forming it synthetically. The use of insulin causes an aggravation of beriberi because it leads to a consumption of the vitamins in reserve in the body.

Professor Egidi spoke on surgery in cancer of the rectum. The operation should begin by closing the routes through which metastasis might occur. The larger part of recurrences originate in the periproct connective tissues. Therefore the operation should be wide both vertically and transversally. Preservation of the anal portion is advisable whenever the distance of the tumor to the anal region permits preservation. Egidi prefers a technic by which removal of the tissues is performed from upper to lower segments of the rectum, because this technic gives the opportunity of cutting off the lymphatic routes of possible propagation of metastases at the beginning of the operation and also of ligating the superior hemorrhoidal artery above its anastomosis to the sigmoid artery. The speaker reported in 1928, before the Società di Chirurgia, twelve cases with a mortality of 50 per cent and also sixteen operations, performed from the lower to the upper segments of the rectum, with a mortality of 25 per cent. From that time on he performed the operation from the upper to the lower segments of the rectum in forty-one cases, with a mortality of 19 per cent.

#### Frequency of Tuberculous Meningitis

Dr. Giordano, in a lecture recently delivered to the Società Medica di Catania said that tuberculous meningitis developed in ninety-eight cases out of a group of 806 cases of tuberculosis seen by him during his practice. The infrequency of tuberculous meningitis in adults is rather relative: The disease develops in 7 per cent of the cases in patients above 30 years of age and in 16 per cent of the cases in patients below that age. The forms of tuberculosis which more frequently are complicated by meningitis are, besides miliary and acute pulmonary tuberculosis, pulmonary tuberculosis of the fibrous type and also tuberculosis of the lymph nodes, which may escape diagnosis during the clinical examination of the patient.

#### The Reticulo-Endothelial System

Dr. Santojanni, in a recent lecture before the Accademia delle Scienze Medico-Chirurgica of Naples, reported the results of experiments that were performed with the aim of investigating the behavior of the reticulo-endothelial system in rabbits with provoked hyperlipemia. The frequency of lipidosis in the clinical field and the importance of the problems involved in the genesis of the syndrome give importance also to the study of the behavior of the reticulo-endothelial system, a specific activity of which controls the metabolism of lipids. The experiments were performed in rabbits treated with lithium carmine and by the administration of daily intravenous injections of lecithin lutein. The worker found that the skin acts as a depot for accumulation of lipids when the equilibrium of the blood is disturbed because of the presence of lecithin and lutein in the blood. The functions of lipid accumulation and storage are performed by the cells of the keratopoietic tissues and also by those of the reticulo-endothelial system. The latter acts by a triple mechanism, by which the activity of its cells for seizing the lipids is stimulated, the morphologic character-

istics of its cells are modified and the cells themselves spread as in a net, in a wide surface appearing under the form of hyperplasia of all the connective cells of the skin. The specific and characteristic activities of the reticulo-endothelial system are more intense in the cutaneous areas that have been made hyperemic by repeated massage than in the areas of normal skin, while no modifications are provoked by the stimulation of the skin by weak doses of roentgen irradiations.

#### Plastic Induration of Penis

Dr. Celli recently reported three cases of sclerosis of the cavernous bodies in members of the same family. Plastic induration is characterized by the presence of fibrous and nodular infiltrates beneath the tunica albuginea in one or both cavernous bodies of the penis. As a rule the infiltrates appear separately in the cylindric, round or ovular forms. They are more perceptible during erection. The sexual functions may be either diminished or absent, because of mechanical causes. Two forms, the essential, or primary, and the secondary, can be differentiated. Primary sclerosis is the manifestation of an arthritic diathesis. It originates in local accumulation of salts, such as uric acid and sodium and calcium urates, which may result in the formation of calcified concretions and even in processes of partial ossification. Secondary sclerosis, on the other hand, follows previous processes of inflammation, infection and trauma. Prognosis and treatment depend on the form, either primary or secondary, of the condition. An antiuric-acidemic treatment is indicated in the primary form, in which, however, surgical intervention gives either uncertain or non-sufficient results.

#### Meeting of Dermatologic Society

The second reunion of the Sicilian Section of the Società Italiana di Dermatologia e sifilografia took place recently at the clinica dermosifilopatica of Palermo, under the chairmanship of Professor Tommasi. Dr. Flarer reported a case of atypical primary cutaneous lymphocytoma simulating a patch of psoriasis. The absence of the Auspitz sign, the presence of moderate infiltration and the fact that the cutaneous lesion was the only one which made its appearance failed to support a diagnosis of psoriasis. The examination of tissue removed for biopsy showed a thick infiltrate and foci of small lymphocytes. There was a lymphocytosis (66 per cent), discovered by examination of the blood.

Dr. Monacelli spoke on the diagnosis of cutaneous leishmaniasis. His method consists in producing an intradermal reaction following the administration of a specific vaccine. In many cases with atypical clinical symptoms in which several serologic methods in use had given uncertain results, the speaker's seroreaction gave positive results.

#### Deaths

Dr. Guglielmo Oliaro, the founder and editor of *Lotte Sanitarie*, of *Minerva Medica* and of other journals of specialties recently died in Turin.

## Marriages

ROBERT L. TOLLE, St. Louis, to Miss Mary Virginia Murphy of Mulberry, Fla., in Lakeland, Fla., recently.

ALFRED LESLIE DUNCOMBE to Miss Louise Howard Flagg, both of Brockton, Mass., May 15.

HERMAN G. EICHORN, Peoria, Ill., to Mrs. Mary McMeach Choate of Carthage, March 28.

JOHN A. VIETOR to Miss Ruth Withington, both of New York, March 14.

JOHN A. KNAUF, Chilton, Wis., to Miss Dorothy Dhein, recently.



## Deaths

**Herbert Lee Alkire**, Topeka, Kan.; Jefferson Medical College of Philadelphia, 1887; in 1908 a member of the House of Delegates of the American Medical Association; member of the Kansas Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; formerly professor of anatomy and otology, Kansas Medical College, Medical Department of Washburn College, Topeka, and associate professor of otorhinolaryngology, University of Kansas School of Medicine, Kansas City; on the staff of St. Francis Hospital; aged 73; died, April 27, of arteriosclerosis.

**Arthur Robin Edwards** ♂ Boston; Chicago Medical College, 1891; professor of principles and practice of medicine and clinical medicine, 1897-1917, and later dean, Northwestern University Medical School; member of the Illinois State Medical Society and the Association of American Physicians; was attending physician to the Cook County, Mercy, Michael Reese, Wesley and St. Luke's hospitals, Chicago; author of a textbook, "Principles and Practice of Medicine"; aged 68; died, May 17.

**Jacob Warren Newman** ♂ New Orleans; Hessische Ludwig-Universität Medizinische Fakultät, Giessen, Hesse, Germany, 1898; Tulane University of Louisiana School of Medicine, New Orleans, 1902; professor of obstetrics, emeritus, Tulane University Graduate School of Medicine; fellow of the American College of Surgeons; for many years on the staff of the Touro Infirmary; aged 61; died, May 1.

**Louis Alfred Roller**, Grand Rapids, Mich.; Rush Medical College, Chicago, 1881; member of the Michigan State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; for many years a member and formerly president of the city board of health; honorary member of the staff of the Butterworth Hospital; aged 81; died, May 4.

**Michael Lawless Ryan**, Syracuse, N. Y.; Syracuse University College of Medicine, 1913; member of the Medical Society of the State of New York; instructor in clinical medicine at his alma mater; aged 44; vice president of the medical staff of St. Joseph Hospital, where he died, March 4, of carcinoma of the colon and liver.

**Nathan Starr** ♂ Charleston, Ill.; Hahnemann Medical College and Hospital, Chicago, 1889; past president of the Coles County Medical Society; for many years member and president of the board of education; on the staff of the M. A. Montgomery Memorial Sanatorium; aged 76; died, March 18, of bronchopneumonia.

**Charles Hodge Wallace Jr.** ♂ St. Joseph, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1924; fellow of the American College of Surgeons; member of the staffs of the Missouri Methodist and St. Joseph's hospitals; aged 36; died, April 26, in Rochester, Minn., of meningitis following a mastoid operation.

**Nichols Peterson**, Tifton, Ga.; Louisville (Ky.) Medical College, 1890; member of the Medical Association of Georgia; formerly member of the state board of medical examiners, state legislature and school board; aged 68; died, March 13, in the Coastal Plain Hospital, of pneumonia as the result of a fall.

**James Bernard Maguire**, Terre Haute, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the Indiana State Medical Association; formerly deputy coroner; aged 53; died, March 2, in the Union Hospital, of cerebral hemorrhage.

**Clarence Eugene Kjos** ♂ Mount Vernon, Wash.; Rush Medical College, Chicago, 1924; past president of the Skagit County Medical Society; member of the Pacific Coast Oto-Ophthalmological Society; on the staff of the Mount Vernon General Hospital; aged 36; died, March 26, of influenza.

**George William Augustin**, Oneonta, N. Y.; New York Homeopathic Medical College and Hospital, 1899; served during the World War; city health officer; aged 59; on the staff of the Aurelia Osborn Fox Memorial Hospital, where he died, March 28, of cirrhosis of the liver and chronic nephritis.

**Richard F. Marrs**, Macomb, Ill.; Eclectic Medical Institute, Cincinnati, 1889; member of the Illinois State Medical Society; president of McDonough County Medical Society; member of the board of health; aged 74; on the staff of the Marietta Phelps Hospital, where he died, March 18, of heart disease.

**Joseph Bynum Stanley**, Jackson, La.; Memphis (Tenn.) Hospital Medical College, 1904; member of the Louisiana State Medical Society; member of the staff of the East Louisiana State Hospital; aged 54; died, February 23, in Memphis, of cerebral thrombosis and bronchopneumonia.

**Daniel Richard Cornelius**, Florence, Ala.; Atlanta (Ga.) School of Medicine, 1908; member of the Medical Association of the State of Alabama; served during the World War; aged 54; on the staff of the Coffee Memorial Hospital, where he died, March 13, of cerebral hemorrhage.

**John Leverett**, Yonkers, N. Y.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1891; member of the Medical Society of the State of New York; aged 69; on the staff of St. John's Riverside Hospital, where he died, March 2, of pneumonia.

**Judson Coleman King**, Sona Bata, Belgian Congo, Africa; University of Michigan Homeopathic Medical School, Ann Arbor, 1913; an associate fellow of the American Medical Association; for many years a medical missionary; aged 56; died, March 27, of pernicious anemia.

**Henry C. Amos** ♂ Denton, Texas; Memphis (Tenn.) Hospital Medical College, 1911; past president of the Denton County Medical Society; formerly county health officer; at one time on the staff of the Denton Hospital and Clinic; aged 51; died, March 26, of lobar pneumonia.

**Gustavus Schlegel**, New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1883; member of the Medical Society of the State of New York; aged 77; died, March 5, in the Lenox Hill Hospital, of erysipelas and arteriosclerosis.

**John Mell Smith**, Starke, Fla.; University of Georgia Medical Department, Augusta, 1912; served during the World War; physician of the Civilians' Conservation Corps; aged 50; died, March 3, in the Veterans Administration Facility, Lake City, Fla., of abscess of the liver.

**Charles Richard Sista**, Trenton, N. J.; Medico-Chirurgical College of Philadelphia, 1915; member of the Medical Society of New Jersey; served during the World War; aged 45; on the staff of St. Francis Hospital, where he died, March 13, of Hodgkin's disease.

**Francis E. Brown** ♂ Catonsville, Md.; University of Maryland School of Medicine, Baltimore, 1893; affiliated with the United States Public Health Service during the World War; on the staff of the Spring Grove State Hospital; aged 69; died, March 9.

**Arthur Henry Perry**, Berea, Ohio; Cleveland Medical College, 1897; Cleveland College of Physicians and Surgeons, Medical Department, Ohio Wesleyan University, 1899; formerly health officer; aged 79; died, February 28, in the Community Hospital.

**Samuel J. Bradbury**, Lynbrook, N. Y.; Bellevue Hospital Medical College, New York, 1880; member of the Medical Society of the State of New York; bank president; formerly health officer of Lynbrook; aged 82; died, March 28, of arteriosclerosis.

**William Douglas Ward** ♂ Rochester, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; fellow of the American College of Surgeons; on the staffs of the Park Avenue and Monroe County hospitals; aged 61; died, May 14.

**David Benjamin Beach** ♂ Hamilton, Texas; Memphis (Tenn.) Hospital Medical College, 1907; secretary of the Hamilton County Medical Society; part owner of the Hamilton Sanitarium; aged 52; died, March 18, in a hospital at Waco.

**Henry A. Zimmerman**, Hollsopple, Pa.; Medical College of Ohio, Cincinnati, 1905; member of the Medical Society of the State of Pennsylvania; formerly bank president and county coroner; aged 53; died, March 16, of cerebral hemorrhage.

**Samuel Isaac Conduff**, Roanoke, Va.; Baltimore Medical College, 1898; member of the Medical Society of Virginia; aged 60; died, March 18, in the University of Virginia Hospital, University, of hypertensive arteriosclerotic heart disease.

**Geza Nemet** ♂ New York; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultása, Budapest, Hungary, 1919; on the staff of the Montefiore Hospital for Chronic Diseases; aged 40; died, March 1, of bronchopneumonia.

**Henry Lerner** ♂ Brooklyn; University and Bellevue Hospital Medical College, New York, 1910; president of the board of directors and chief of the medical staff of the Crown Heights Hospital; aged 50; died, March 6, of heart disease.

**Lorenzo Walter**, Spokane, Wash.; Northwestern University Medical School, Chicago, 1928; member of the Washington State Medical Association; aged 35; died, March 25, of complications resulting from an infection of the hand.

**David Donald**, Victoria, B. C.; L.R.C.P., Edinburgh, L.R.C.S., Edinburgh, L.F.P. & S., of Glasgow, Scotland, 1892; University of Durham College of Medicine, Newcastle-upon-Tyne, England, 1908; aged 70; died, February 2.

**Walter Edward King** ☉ Detroit; Detroit College of Medicine, 1914; member of the American Society of Clinical Pathologists; laboratory executive of Parke, Davis & Co.; aged 58; died, May 1, of coronary thrombosis.

**Robert Kabus Jr.**, New York; University and Bellevue Hospital Medical College, New York, 1905; member of the Medical Society of the State of New York; consultant to the Midtown Hospital; aged 57; died, March 2.

**Thomas Leland Baxter** ☉ Newark, Ohio; Rush Medical College, Chicago, 1902; past president of the Licking County Medical Society; on the staff of the Newark Hospital; aged 56; died, March 7, of pneumonia and meningitis.

**Francis Gilchrist Jones**, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1910; member of the Medical Association of Georgia; aged 49; died, March 2, in a local hospital, of complications following an appendectomy.

**Robert D. Lange**, Cincinnati; Kungl. Universitetet i Uppsala Medicinska Fakulteten, Sweden, 1902; director of the roentgen ray department of the Longview Hospital; aged 54; was killed, February 21, when struck by an automobile.

**Oscar Silas Cox**, McArthur, Ohio; Starling Medical College, Columbus, 1892; member of the Ohio State Medical Association; president and formerly secretary of the Vinton County Medical Society; aged 70; died, March 19.

**Hugh Moran Anderson**, Sanatorium, Miss.; College of Physicians and Surgeons, Baltimore, 1907; veteran of the Spanish-American War; on the staff of the State Tuberculosis Sanatorium; aged 55; died, February 6.

**Charles B. Schoales**, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1886; member of the Medical Society of the State of Pennsylvania; aged 71; died, March 17, of chronic myocarditis.

**John T. Carter**, Triadelphia, W. Va.; Medical College of Ohio, Cincinnati, 1874; member of the West Virginia State Medical Association; aged 85; died in March, of empyema of the gallbladder and chronic nephritis.

**Marcus Earl Wilson** ☉ Phoenix, Ariz.; Medical College of Ohio, Cincinnati, 1907; member of the Associated Anesthetists of the United States and Canada; aged 53; died, March 29, of pulmonary tuberculosis.

**Philip Beekman** ☉ Natchez, Miss.; Bellevue Hospital Medical College, New York, 1888; formerly on the staff of the Natchez Charity Hospital; aged 71; died, February 14, of cerebral thrombosis and arteriosclerosis.

**James Daniel Blevins**, Beaumont, Texas; University of Texas School of Medicine, Galveston, 1915; served during the World War; aged 54; died, March 8, in the William Beaumont Hospital, El Paso, of pneumonia.

**Harry Reginald Williams**, Lincoln, Ill.; Loyola University School of Medicine, Chicago, 1931; member of the Illinois State Medical Society; on the staff of the Lincoln State School and Colony; aged 31; died, March 4.

**Henry Valentine McLaughlin**, Boston; L.R.C.S., Ireland, 1884, and L.R.C.P., Edinburgh, 1884; an Affiliate Fellow of the American Medical Association; aged 79; died, February 15, of coronary thrombosis.

**Emma Jane Davies Pronger**, Denver; University of Nebraska College of Medicine, Homeopathic Department, Lincoln, 1885; Hahnemann Medical College and Hospital, Chicago, 1886; aged 73; died, March 9.

**Robert Lewis Sample**, Summit, Ga.; Bellevue Hospital Medical College, New York, 1892; member of the Medical Association of Georgia; aged 68; died, March 12, of pneumonia following influenza.

**Bartolo Pedro Oliveros**, Charleston, S. C.; University of Maryland School of Medicine, Baltimore, 1883; formerly on the staff of the Savannah (Ga.) Hospital; aged 75; died, March 2, of cerebral hemorrhage.

**Florence Frances Rice**, Boston; Tufts College Medical School, Boston, 1903; member of the Massachusetts Medical Society; aged 80; died, February 4, in the Boston State Hospital, of arteriosclerosis.

**John Plumer Cole**, Wheeling, W. Va.; College of Physicians and Surgeons, Baltimore, 1903; member of the West Virginia State Medical Association; aged 63; died, March 24, of coronary occlusion.

**Willard Edwin Dinsmore**, Claremont, S. D.; Jefferson Medical College of Philadelphia, 1886; member of the South Dakota State Medical Association; aged 77; died, February 14, of arteriosclerosis.

**Albert Franklin Woodward**, Detroit; Trinity Medical College, Toronto, Ont., Canada, 1885; aged 79; died, February 19, in the Highland Park (Mich.) General Hospital, of endocarditis and arteriosclerosis.

**Palmer Augustus Potter**, Summit, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; served during the World War; aged 62; died, March 16, of coronary occlusion.

**James C. Osborne**, Acworth, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1897; member of the Medical Association of Georgia; aged 82; died, March 11, of bronchial asthma.

**Samuel Riddle Proudft**, Youngstown, Ohio; Ohio Medical University, Columbus, 1898; member of the Ohio State Medical Association; on the staff of St. Elizabeth's Hospital; aged 69; died, February 18.

**Walter White Burgess**, Roanoke, Va.; Johns Hopkins University School of Medicine, Baltimore, 1934; assistant resident physician at the Jefferson Hospital; aged 28; died, March 16, of pneumonia.

**Frank McMorro**, Syracuse, N. Y.; Bellevue Hospital Medical College, New York, 1893; member of the Medical Society of the State of New York; aged 65; was found dead, February 17.

**William H. Gelsthorpe**, Wellsburg, W. Va.; University of Wooster Medical Department, Cleveland, 1885; at one time mayor of Great Falls, Mont.; aged 78; died, February 7, of myocarditis.

**Herman Fred Koesterling**, Kansas City, Mo.; Kansas City Hahnemann Medical College, 1907; aged 72; died, February 22, in St. Joseph's Hospital, of pyloric obstruction and postoperative pneumonia.

**Joseph A. Cramp**, Philadelphia; Medico-Chirurgical College of Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; aged 70; died, March 29, of bronchopneumonia.

**Josiah S. Chastain**, Prescott, Ark.; University of Nashville (Tenn.) Medical Department, 1903; member of the Arkansas Medical Society; aged 66; died, March 12, of coronary occlusion.

**Duncan Allison**, Welland, Ont., Canada; University of Toronto Faculty of Medicine, 1908; served with the Canadian Army during the World War; county coroner; aged 58; died, March 15.

**Christian Edward Petersen**, Richmond Hill, N. Y.; Long Island College Hospital, Brooklyn, 1897; for ten years medical inspector for the state department of education; aged 60; died, March 5.

**David Harvey Nichol**, London, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1919; medical director of the Westminster Hospital; aged 39; died, February 2.

**Edward Michael Merrins**, Whittier, Calif.; University of the City of New York Medical Department, 1890; aged 74; died, February 17, of myocarditis and chronic rheumatoid arthritis.

**Arthur C. Norton**, Middletown Springs, Vt.; New York Homeopathic Medical College, 1882; member of the Vermont State Medical Society; aged 76; died suddenly, February 10.

**Latta Arthur Crandell**, Lewisport, Ky.; University of Louisville Medical Department, 1911; aged 46; died, March 28, in the Owensboro (Ky.) City Hospital, of lobar pneumonia.

**George Sidney Mothersill**, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., Canada, 1902; aged 56; died, February 18, of carbon monoxide poisoning.

**William Zitron** ☉ Merrick, N. Y.; University and Bellevue Hospital Medical College, New York, 1928; aged 32; died, March 1, in the New York Hospital, of agranulocytosis.

**Harry Dash Johnson** ☉ Daytona Beach, Fla.; Bellevue Hospital Medical College, New York, 1897; member of the state board of health; aged 59; died, February 27.

**Joseph Myers**, Albany, Ore.; College of Physicians and Surgeons, Keokuk, Iowa, 1866; Civil War veteran; for many years city health officer; aged 95; died, February 10.

**Ruth Meitin**, Chicago; Rush Medical College, Chicago, 1935; aged 24; assistant in the radiologic department of Billings Hospital, where she died, March 16, of pneumonia.

Lemon R. Markley, Bellingham, Wash.; Omaha Medical College, 1883; for many years city health officer and member of the board of health; aged 76; died, February 11.

Robert Innis Bromley, Sonora, Calif.; University of California Medical Department, 1882; aged 79; died, February 1, of bronchopneumonia, nephritis and arteriosclerosis.

William Ness, Westmount, Que., Canada; L.R.C.P., Edinburgh, L.R.C.S., Edinburgh and L.F.P.S., Edinburgh, 1903; aged 58; died in February, of pneumonia.

Thomas H. Duckett, Lamar, Mo.; Kansas City Medical College, 1889; formerly member of the state legislature; aged 81; died, February 23, of thrombosis.

Lawrence Joshua Davis, Dixons Mills, Ala.; Medical College of Alabama, Mobile, 1895; aged 62; died, February 11, of disease of the prostate gland.

William H. Wallace, Callery, Pa.; Homeopathic Hospital College, Cleveland, 1884; aged 72; died, February 20, of cerebral hemorrhage and arteriosclerosis.

William N. Bragg @ Reading, Ohio; Medical College of Ohio, Cincinnati, 1897; aged 68; died, February 21, of myocarditis and coronary thrombosis.

William D. Delzell, Springfield, Mo.; St. Louis Medical College, 1877; formerly member of the state legislature; aged 91; died, February 9.

Alfred P. Stoddart, Orangeville, Pa.; Hahnemann Medical College of Philadelphia, 1880; aged 78; died, February 6, of cerebral hemorrhage.

Jacob D. Richer, Warsaw, Ind.; Hahnemann Medical College and Hospital, Chicago, 1896; aged 69; died, February 28, of arteriosclerosis.

John G. Biller, Spadra, Calif.; Detroit Medical College, 1884; aged 76; died, February 24, of diabetes mellitus and arteriosclerosis.

Charles Kelsey Osborne, Dayton, Wash.; Denver College of Medicine, 1899; aged 63; died, February 17, of a self inflicted bullet wound.

John Harvey Carr, Maynardville, Tenn.; University of Tennessee Medical Department, Nashville, 1900; aged 63; died, February 27.

Dugald D. Munro @ Kinde, Mich.; Detroit College of Medicine, 1891; aged 70; died, February 22, of acute dilatation of the heart.

George Robert Waite, Kiowa, Kan.; Illinois Medical College, Chicago, 1901; aged 59; died, February 27, of cerebral hemorrhage.

John W. Taylor, Luthersville, Ga.; Atlanta Medical College, 1875; postmaster; aged 81; died, February 25, of lobar pneumonia.

William H. Green Jr., Newark, N. J.; Long Island College Hospital, Brooklyn, 1912; aged 45; died, February 13, of acute nephritis.

Thomas S. Watson, Bevier, Mo.; Missouri Medical College, St. Louis, 1882; aged 78; died, February 10, of angina pectoris.

Charles W. Carter, Mount Pleasant, Iowa (licensed in Iowa in 1886); aged 83; died, February 2, of gangrene of the foot.

Thomas J. Woods, Evening Shade, Ark.; Kentucky School of Medicine, Louisville, 1876; aged 85; died, February 18.

Aaron Strashun, Cincinnati; Chattanooga (Tenn.) Medical College, 1895; aged 69; died, February 28, of myocarditis.

John A. McCorkle, Ponchatoula, La. (licensed in Louisiana in 1895); aged 77; died, March 8, of cerebral hemorrhage.

Paul Plez Cooper, Alma, Ga.; Hospital Medical College, Atlanta, 1911; aged 46; died, March 10, of heart disease.

William Reid, Wyoming, Ont., Canada; University of Toronto Faculty of Medicine, 1904; died, February 4.

Albert S. Kunin, Detroit; Detroit College of Medicine, 1928; aged 34; died, March 2, of morphine poisoning.

Walter John Graves, Brookline, Mass.; Boston University School of Medicine, 1899; aged 72; died, February 20.

Emma Connor, Belleville, Ont., Canada; University of Toronto Faculty of Medicine, 1902; died, February 16.

Jacob Ernest Gaddis, Beaver, Pa.; Jefferson Medical College of Philadelphia, 1888; aged 75; died, March 14.

William Francis Keppel, Brooklyn; Long Island College Hospital, Brooklyn, 1897; aged 61; died, February 8.

Frederick William Hill, Ottawa, Ont., Canada; Trinity Medical College, Toronto, 1903; died, February 25.

## Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

### THYROTOXICOSIS DURING TREATMENT OF OBESITY

To the Editor:—A woman, aged 22, who has been married about six months, has always been from 10 to 20 pounds (4.5 to 9 Kg.) overweight. Tonsillectomy was done at 8 years of age, appendectomy recently. During the past eight months, she has noticed that she has gained more weight around the hips and thighs, the rest of the body remaining the same. She is 5 feet (152 cm.) tall and weighs 128 pounds (58 Kg.). Eighteen months ago she weighed 138 pounds (63 Kg.), but the excess was well proportioned over the entire body. Under rigorous dietary restriction for ten months she lost 16 pounds (7.3 Kg.). At present, in spite of moderate dietary restriction, she is gaining weight about the hips and thighs. The hands are small. The legs are well shaped and slender, as compared to the thighs. The breasts are fairly large and pendulous. There is no mental retardation, but the patient complains frequently of drowsiness and usually sleeps ten hours out of every twenty-four. She has a good appetite; there is slight constipation. The heart is normal, the pulse rate 90, the blood pressure 105 systolic, 70 diastolic. The patient is often very nervous and easily excited. She cries at the slightest provocation. There is occasional nausea and temporal headache. Menstrual periods occur regularly every twenty-six days with a fairly profuse flow, slight headaches and moderate dysmenorrhea. Menstruation began at 11, and the secondary sex characteristics appeared early. There is no frigidity, and the uterus is of normal size, though retroverted. The basal metabolic rate was minus 24 two and one-half months ago. She was put on desiccated thyroid, 1 grain (0.065 Gm.) three times a day for ten days, then 1 grain twice a day, for ten days, and 1 grain daily since that time. When the patient first began thyroid, the pulse went to 125 and she became more nervous. Thyroid was discontinued for one week and then started again. While she was taking 2 grains (0.13 Gm.) daily, her pulse was 110 and the nervousness continued. She has been taking 1 grain a day for the past six weeks. This causes her to be more nervous than normal; the pulse rate is 96. Her appetite is good, but the constipation continues, and despite a diet of 1,500 calories daily the patient is slowly and constantly gaining weight. Most of the gain in weight is taking place about the hips and thighs. The patient's mother and sister live in another town but are reported to be of the same type, except that the obesity is much more marked, especially around the hips and thighs, and, in the mother, also around the shoulders. Their basal metabolic rates are also low, and thyroid medication has been ineffectual in their cases also. Is this a case of pituitary obesity? Do you think that pituitary lobe preparations should be given? What type would you suggest? Should dietary restrictions and thyroid be discontinued? I assure you that I will appreciate your help in this matter. Kindly omit name and town.

M.D., Texas.

ANSWER.—Although the "girdle obesity" has sometimes been ascribed to ovarian dysfunction, there is nothing in the description of this case from which a diagnosis of "endocrine obesity" can be made. The endocrine balance that determines the physical type or constitution of the individual, like the physiognomy, is an inherited attribute. The description of the mother and the sister makes it seem probable that the patient's difficulties as regards the distribution of fat arise not from her own glands but from those of her ancestors. Unfortunately our present knowledge of endocrinology is as yet inadequate to cope with the problem of the redistribution of local fat depots.

As contrasted with the distribution of adipose tissue, the problem of total overweight is much simpler. The patient is either sensitive to thyroid or she is taking more of it than has been prescribed. At any rate she is suffering from overdosage of this substance. In addition, she is consuming sufficient food to gain weight in spite of her increased metabolic rate. The administration of thyroid should be stopped, and the substitution of any other glandular preparation or medication is not recommended. The basal metabolic rate of minus 24 observed two and one-half months ago does not necessarily indicate a hypothyroidism. It should be remembered that the normal variation in the basal metabolic rate is as low as minus 15. The fact that the method of calculating the basal metabolic rate renders the values for overweight individuals falsely low, by assuming a normal proportion of active to inert tissue, should also be taken into account. It is possible that a recalculation of the metabolic reading on the basis of the ideal rather than the actual weight would result in a value within the normal range.

Regardless of the state of her endocrine glands, the proper reduction of the patient depends on decreasing the caloric intake below the level of the energy output. In such cases as this it is often wise to hospitalize the patient so that the effects of a known and measured caloric intake can be demonstrated for

the benefit of both patient and physician. When it has been demonstrated to the patient that she can reduce on a correct dietary regimen, and after she has been reduced to her proper weight, the permanence of the cure depends on whether the patient has acquired a good "food habit" for her previous bad one.

#### URTICARIA

*To the Editor:*—A white woman, aged 39, has chronic urticaria. This first developed during a vacation in August while the patient was at a Minnesota lake region, and she believes that she may have contracted her hives from swimming. There is no history of previous allergic phenomena. She is married and has a normal child 16 years of age. General physical examination is essentially negative except for urticarial lesions and secondary lesions due to scratch marks. There is apparently no source of the urticarial origin to be found in the sinuses, lungs, gall-bladder or thyroid. Laboratory examinations, including Wassermann, blood, urine and stools, are negative. The numerous patch tests have not been run as yet. Since the original severe attacks following her vacation in August the condition has improved; however, there are some lesions present almost daily, with exacerbations varying at times to a moderate angioneurotic edema. In addition to symptomatic therapy the patient has been on calcium, acid, alkali and quinine therapy. I have also tried typhoid vaccine and autohemotherapy as nonspecific measures. The patient has likewise been on Rowe's eliminative diets, with no improvement. She is using the so-called nonallergic cosmetics. All methods of therapy have been only of transient benefit. Is it possible that she may have acquired this urticaria from swimming? If so, why does the urticaria persist? Have you any further suggestions as to therapy? Should I perform the numerous patch tests? If so, is it probable that these will be of slight benefit in determining the specific allergen? Would the specific allergen be more apt to be found in dust rather than the food groups? Please omit name.

M.D., North Dakota.

*ANSWER:*—It is unlikely that the urticaria in this case is related to swimming. The cause of the condition should be looked for in foods and possibly drugs, since these are the commonest factors in urticaria. Tests should be done, preferably by the intracutaneous method rather than by the scratch method, since the former is more likely to give positive reactions. Patch tests seldom are indicated in urticaria, even if the condition is due to environmental substances. Positive reactions are obtained in about 50 per cent of the cases tested intracutaneously. Even when a test is positive, its clinical significance must be determined both by elimination and by observation of the effect of the material on the patient. If tests are negative, a careful food diary may be of help. The foods eaten within twelve hours preceding the onset of an attack, and especially those of the meal preceding the attack, should be recorded. After a number of meals, eaten before the onset of attacks, have been recorded, an analysis of the foods common to all these meals frequently gives a clue to the cause of the condition.

Regarding additional therapy, nonspecific treatment with stock vaccines has been used, with the report of some success in persistent cases.

#### INJURIOUS EFFECT OF CHLORINE IN PAPER MILL

*To the Editor:*—Please send to me at once any available data that you may have on the effect of the so-called bleach gas, which is produced in the process of manufacture and bleaching paper manufactured in Wisconsin mills, of rag content. I am particularly interested in the effect and its probable relation or cause of bronchial asthma and its likelihood of relation to a first attack after a short exposure.

M.D., Wisconsin.

*ANSWER:*—The bleaching agent in Wisconsin paper mills devoted to rag paper manufacture is likely to be chlorine derived from chlorinated lime. In other Wisconsin mills engaged in the manufacture of paper from wood pulp, sulfur dioxide, a bleaching agent, might be present, but primarily from the sulfite process and not from any direct use as a bleach. As little as 15 parts of chlorine per million of air will produce immediate irritation of the throat. Indefinite exposure should not be permitted when concentrations are in excess of 1 part of chlorine per million. Chlorine is nearly twenty times as toxic as hydrochloric acid, and certainly no doubt can be entertained as to its immediate action in bringing about prompt respiratory inflammation and pulmonary edema. But for a long time dispute has raged over the remote effects of chlorine gassing. Apparently one single severe gassing, such as commonly takes place in warfare, is followed by acute episodes including severe immediate sequelae; but, if recovery from the acute effects is once procured, no permanent damage is expectable. Apparently this is not true for industrial exposures in which day by day the inhalation of relatively low concentrations occurs. Some such exposed workers may develop emphysema, chronic bronchitis or bronchial asthma. The new worker when first exposed may be much more susceptible to the action of the gas than longer exposed workmen. After a

short time the new worker may accommodate himself to the injurious gas, but later in the course of months or years chronic manifestations may arise. It is possible that some workers become sensitized through the action of chlorine, but naturally the sensitization is not to the chlorine itself. The irritating action of the chlorine prepares the respiratory tract for sensitization by bacteria, or perhaps by new protein forms, produced by the chlorine in contact with the tissues of the breathing apparatus. The occurrence of injurious effects from exposure to chlorine in a paper mill is well within the realm of possibility.

#### POSTPARTUM ADYNAMIC ILEUS

*To the Editor:*—Recently I had a case of what appeared to be postpartum adynamic ileus. Do you feel that the condition is apt to recur in a succeeding postpartum period? The patient is a primipara. She presented other evidences of an unstable autonomic nervous system; viz., at the end of the first stage her blood pressure dropped to about 50 systolic and her pulse reached about 140. Her heart and lungs were apparently normal. There was no apparent bleeding and no evidence of concealed hemorrhage. The labor, under pentobarbital-scopalamine analgesia, had been relatively easy and short, and the analgesia had been satisfactory. As soon as it was recognized that the patient was in a condition of shock, the patient was rapidly delivered by low forceps and intravenous administration of 10 per cent dextrose in 1,000 cc. of saline solution instituted. During the intravenous therapy, which lasted about one-half hour, the patient suddenly recovered from the analgesia (and the ether which she had had during delivery) and began to talk in a perfectly oriented, alert manner. Her blood pressure in the meantime returned to 130 systolic. The abdominal distention developed within twelve hours or so and was extremely resistant to all the usual measures to relieve it, until four days later, when it gradually subsided. The distention was apparently chiefly of the small bowel rather than of the stomach or the large bowel. Please omit name.

M.D., Montana.

*ANSWER:*—This case is interesting, but not sufficient data have been provided to make a positive diagnosis possible.

There are two elements, which may or may not be related: The shock during delivery may have been nervous or due to the effect of the drugs administered, or possibly an acute hyperinsulinemia with hypoglycemia. Paralytic distention of the bowel during and after delivery, while of rare occurrence is sufficiently common to require attention. During labor it is explained as some disturbance of the autonomic system. It has followed injury and contusion to the bowel when the bowel is crushed by the manipulations used to express the placenta, and when it occurs in the puerperium a variety of reasons are given: (1) the one just mentioned; (2) the regurgitation of blood from the uterus through the tube into the peritoneal cavity; (3) minute extravasations of blood in the uterine peritoneum as the result of crushing the uterus, or of a mild toxemia analogous to abruptio placentae; (4) mild peritonitis resulting from the stirring up of a latent tubal infection, or (5) simply the lack of counterpressure from flaccid abdominal muscles, there being reduced tone in the intestinal walls, permitting gas to accumulate in the bowel. The combination in this case of shock and abdominal distention makes one suspect something organic rather than functional.

#### THERAPEUTIC ABORTION FOR TUBERCULOSIS

*To the Editor:*—A secundipara, aged 21, with moderately advanced pulmonary tuberculosis, is apparently four and one-half months advanced in pregnancy. Is evacuation desirable medically or possible legally and if so through what formality? What is today considered the most reliable operative (abdominal) procedure to obtain permanent sterility? Under what conditions can such an operation be legally performed in Illinois? Please omit name.

M.D., Illinois.

*ANSWER:*—The legality of inducing abortion is not well established by statute in most states but it is generally accepted that therapeutic abortion is justifiable legally as a life-saving procedure. Usually the supporting opinion and advice of one or more consultants is deemed necessary for the protection of the surgeon who performs the operation and of the institution in which it is done.

There is no way of obtaining legal sanction for the performance of this therapeutic procedure. Medically it may be justifiable from the point of view of treatment, and it appears that the indications are being gradually extended to include not only conditions which are an immediate threat to life but also those diseases which are made worse by pregnancy and tend to shorten life.

As far as tuberculosis is concerned, there are varying opinions relative to the therapeutic value of abortion in arresting the progress of the disease. In general, one has to consider the reaction of the pregnant woman, but, as a rule, the pregnancy would be considered a handicap in managing a case of pul-

monary tuberculosis. Ordinarily if termination of the pregnancy seems desirable it should be done in the first trimester, and this period is one of the more serious so far as the indirect effect of the pregnancy on the tuberculous process is concerned. As a rule, the performance of an abortion for pulmonary tuberculosis after this period is not indicated.

Whether or not sterilization is justified depends on the prognosis for cure of the tuberculosis. Pregnancy is not believed to be desirable unless a cure has been established by a definite arrest of the disease processes. When a cure is not probable, sterilization is indicated; but consent of both husband and wife is necessary.

When therapeutic abortion and sterilization are both indicated, abdominal hysterotomy and tubal resection are desirable methods. Some form of tubal resection is the best form of sterilization. The uterine cornua may be excised with the proximal portion of the tube. The Madlener technic of crushing and tying the tubes is simple and quite efficacious, though some failures have resulted.

There is no mechanism by which legal permission may be obtained for the performance of an operation for sterilization in Illinois. The only protection is the following of justifiable medical indications and the securing of the consent of both husband and wife.

#### TREATMENT DURING MENOPAUSE

To the Editor:—Kindly outline a treatment for menopausal symptoms. What is the value of theelin and theelol (Parke-Davis) medication on these symptoms? Please omit name. M.D., Chicago.

ANSWER.—Theelin and theelol are typical of the group of estrogenic substances which at present are being used in the treatment of "hot flushes," "nervousness," and insomnia associated with the menopause. Their use is based on the observed fact that after the menopause there may be decreased excretion of estrogenic substances. The inference is that menopausal vasomotor instability and similar menopausal symptoms are the result of a lack of estrogenic substance in the body. Many physicians believe that replacement therapy with the estrogenic group of drugs (theelin, theelol, amniotin, progynon, progynon-B) is an effective treatment of these subjective disorders of the menopause.

Seyringhaus finds that the dosage of the products used orally (theelol capsules, amniotin capsules, progynon tablets) must be about five times as large as that dosage of the preparations used for parenteral injection (theelin [aqueous], theelin in oil, amniotin in oil, progynon, progynon-B) to produce the same effect. He discusses the advantages of each type of medication and believes that the current cost of the drugs in equivalent dosage in terms of rat or of international units should be the deciding factor in selecting the product to be used. Treatment may be started with oral dosage of 100 or 200 rat units (or the equivalent in international units) daily and increased or decreased as the response warrants. In severe cases 50 rat units a day may be given parenterally. A mild sedative is a helpful adjuvant.

Following are references:

- Seyringhaus, E. L.: The Relief of Menopause Symptoms by Estrogenic Preparations, *THE JOURNAL*, Feb. 23, 1935, p. 624.  
Biskind, M. S.: Commercial Glandular Products, *THE JOURNAL*, Aug. 31, 1935, p. 667.  
Novak, Emil: The Uses and Abuses of Modern Gland Products in Gynecologic Disorders, *THE JOURNAL*, Aug. 31, 1935, p. 662.  
Glandular Physiology and Therapy, Chicago, American Medical Association, 1935.

#### BLOOD PRESSURE CHANGES IN PREGNANCY

To the Editor:—A woman, aged 36, has had a blood pressure of 160 systolic, 90 diastolic, since she was 24 years old and during this time she has had three children, the youngest being 5 years old, and shortly after she has conceived her systolic pressure drops to from 124 to 130, but within a month after delivery it returns to 160. Can you advise me as to what secretion during pregnancy might account for this? Please omit name. M.D., Kansas.

ANSWER.—The phenomenon observed in this case is not infrequently encountered. An accurate explanation of the occurrence is difficult, if not impossible. One of the functions attributed to the pituitary is that of regulating the blood pressure. It is known that the ovary exerts some sort of counter regulatory effect on the pituitary. It is known that the ovarian secretion is altered during pregnancy and it therefore seems probable that such changes in blood pressure are due to some alteration in pituitary control. This statement, however, is not susceptible of proof of any sort and to be accurate one must say that it is impossible to say what secretion causes such blood pressure changes during pregnancy.

#### RETURN OF FUNCTION AFTER NERVE INJURY

To the Editor:—A woman fell from a step-ladder while hanging wallpaper in June 1935, and one leg went through a window. The glass was shattered and it severed the achilles tendon completely, also the posterior tibial artery and nerve, and another laceration severed the gastrocnemius muscle. The lacerations and achilles tendon were sutured. The posterior tibial nerve was also sutured end to end with fine black silk. The wounds healed without infection. However, the sensation has not yet returned to a small area on the plantar surface of the foot and the patient unwittingly burned this with a hot water bottle. The burn healed slowly but now from time to time what I believe are trophic ulcers develop here. What can be done to toughen the skin? Would it be wise to try a pedicle skin graft or might it not take? Any advice would be appreciated. M.D., Michigan.

ANSWER.—It is still too early for complete return of sensory and trophic function in the area of distribution of the divided posterior tibial nerve. We know of nothing that will "toughen" the skin when its nerve supply has been destroyed and would be reluctant to try any type of graft or flap to cover the open wounds. They would be subject to the same handicap as the tissues at the site of the open wound which are temporarily deprived of their nerve supply. A graft or flap can live only if it develops a blood supply at the site at which it is transplanted, and the innervation of the tissues at the site of the open wound is an important factor in vascular function.

The most important considerations in the treatment of the patient's condition at this time are rest, elevation of the limb, patience and, above all, every possible effort to prevent adding additional infection from the outside.

#### GONORRHEAL EPIDIDYMITIS

To the Editor:—Please give me the correct treatment for a case of gonorrheal epididymitis of five months' duration with slight enlargement of the epididymis but rather marked tenderness on palpation, slight enlargement of the inguinal glands, and prostatitis, which has about cleared under weekly massage. A small amount of purulent discharge remains. The seminal vesicles were involved but seem to have recovered under weekly strippings. 1. Would gonococcus filtrate (Corbus-Ferry) be likely to be of benefit in this case? 2. May strenuous exercise be permitted? 3. What is the status of 1:5,000 aqueous solution of metaphen as a urethral injection? 4. Do you recommend intravesical irrigations? If so, with what solution? 5. Is bimonthly intercourse likely to prolong the infection indefinitely? 6. Is there still much likelihood of an arthritis developing? Please omit name and city. M.D., Indiana.

ANSWER.—1. The benefit obtained from a gonococcus filtrate is questionable, but it might be tried.

2. Strenuous exercise should not be permitted in any infection of the genital tract.

3. This solution is of no more value in treatment than any of the other injections, such as the silver salts, which have stood the test of time.

4. Intravesical irrigations could be of little value in the treatment of a case like this.

5. All intercourse should be omitted in all cases of infection of the genital tract until the infection is cleared up.

6. There is always a possibility of arthritis complicating an infection of the genital tract.

#### ADVANTAGES OF HOMOGENIZATION OF INFANT FOODS

To the Editor:—Does homogenization in your opinion add much to digestibility? STANLEY NICHOLS, M.D., Long Branch, N. J.

ANSWER.—Ready prepared homogenized vegetables, fruits and cereals are now being marketed. The process is advocated because it breaks down the cellular envelopes and fibrous material. This allows more rapid and complete exposure to gastric and intestinal secretions, thereby hastening the process of digestion and at the same time facilitating more complete absorption of food elements. The more complete breaking down of fibrous bulk produces less mechanical irritation to the intestinal tract. Such finely divided foods are of primary advantage in the feeding of young infants and certain older children and adults needing a readily assimilated and nonirritating diet.

Prior to 1915, vegetables were a late addition to the infant's diet, usually being added toward the end of the second year or later. Well cooked and finely sieved vegetables have gradually been added at earlier dates, until now it is customary to give them between the fifth and sixth months of the first year. The importance of vegetables from a nutritional standpoint makes this earlier inclusion in the diet desirable. One of the chief difficulties of feeding them at an early age has been the resultant mechanical irritation. Homogenization attempts to overcome this difficulty.

## QUININE SULFATE AND ABORTION

To the Editor—Will you please give me the consensus as to whether quinine sulfate will cause abortion. Dr. De Lee states in his textbook that in conjunction with castor oil it will induce labor in about 30 per cent of cases at term, but he does not mention it as a method of inducing abortion. I have recently attended a case of abortion in which quinine had been used in the treatment of a cold. From all indications the fetus had died prior to the administration of the quinine, though the patient thinks that to be the cause. Please omit name if published.

M D, Kentucky

ANSWER—Opinions are unequally divided regarding the effect of quinine on pregnancy. Most accoucheurs who practice in malarial districts use quinine regularly and freely and report that it does not produce abortion, on the contrary, they think that it prevents abortion in malarious gravidas. At the end of pregnancy, quinine seems to sensitize the uterus, and on rare occasions it may induce labor by itself, also it may strengthen the pains to a pathologic degree, but this is uncommon.

As a method of inducing abortion, even when given in large doses, it has failed, and in all probability some other cause must be sought in the case mentioned.

## USE OF CHOLERETIC IN ABSENCE OF GALLBLADDER

To the Editor—A contradiction in your column of the February 8 issue cannot go unnoticed. In your answer to the inquiry of Dr. R. Barr of Grand Rapids, Mich., the dose of a chologogue was given for use in a patient who did not have a gallbladder. This therapy strikes me as being as efficacious as the administration of a pituitary like product would be in a woman who has had a panhysterectomy. Certainly if the intrahepatic and extrahepatic bile ducts needed treatment in this particular case, the Council accepted Decholin—the true choleretic—would at least have been indicated and certainly clinically beneficial.

ZACHARY BLIER, M D, Chicago

ANSWER—Sodium taurocholate is, like "decholin," "glyco-tauro" and other bile salt preparations, a substance that stimulates the secretory activity of the liver. It is a true choleretic and, as such, can act even when the gallbladder is absent.

## SKIN TEST FOR BRUCELLA ABORTUS INFECTIONS

To the Editor—In connection with an article on "The Prevalence of Mild Brucella Abortus Infections," by W. Beecher Scoville, which appeared in THE JOURNAL, Dec 14, 1935, I should like to know where material for skin testing can be obtained.

JOHN B. BEESON, M D, Wooster, Ohio

ANSWER—Brucella melitensis (abortus) vaccine (N N R) may be used for skin testing. This vaccine is available through the usual trade sources.

## Council on Medical Education and Hospitals

### ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, March 7, 1936.

#### Hospitals Approved for Intern Training

Brewster Hospital, Jacksonville, Fla.  
St. Vincent's Hospital, Jacksonville, Fla.  
Lutheran Memorial Hospital, Chicago  
Cambridge City Hospital, Cambridge, Mass.  
Dallas Methodist Hospital, Dallas, Texas  
St. Mary's Hospital, Racine, Wis.

#### Hospitals Approved for Residencies in Specialties

Children's Hospital, Birmingham, Ala. Pediatrics  
Mary's Help Hospital, San Francisco. Surgery  
Eloise Hospital for Mental Diseases, Eloise, Mich. Neuropsychiatry  
St. Joseph Hospital, Kansas City, Mo. Pathology  
St. John's Hospital, Brooklyn. Pathology  
Mar. Immaculate Hospital, Jamaica, L. I. N. Y. Pathology  
State Hospital for Crippled Children, Elizabethtown, Pa. Orthopedics  
Hahnemann Hospital, Philadelphia. Anesthesia

#### Hospitals Approved for Additional Residencies

Provident Hospital, Chicago. Pathology  
Methodist Episcopal Hospital, Indianapolis. Anesthesia  
Harlem Hospital, New York City. Pathology  
Metropolitan Hospital, New York City. Orthopedics  
Watts Hospital, Durham, N. C. Medicine  
Geo. F. Geiswiler Memorial Hospital, Danville, Pa. Otolaryngology  
Rhode Island Hospital, Providence, R. I. Anesthesia and cardiology  
John Sealy Hospital, Galveston, Texas. Medicine and neuropsychiatry

## Medical Examinations and Licensure

### COMING EXAMINATIONS

#### STATE AND TERRITORIAL BOARDS

ALABAMA, Montgomery, June 23-25. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.  
ARIZONA, Basic Science. Tucson, June 16. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson. Medical. Phoenix, July 7-8. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.  
CALIFORNIA, San Francisco, July 6-9, and Los Angeles, July 20-23. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.  
COLORADO, Denver, July 7. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.  
CONNECTICUT, Basic Science. New Haven, June 13. Prerequisite to license examination. Address State Board of Healing Arts, 1895 Yale Station, New Haven. Medical (Regular). Hartford, July 14-15. Endorsement. Hartford, July 28. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. Medical (Homeopathic). Derby, July 14. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.  
DELAWARE, July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.  
DISTRICT OF COLUMBIA, Washington, July 13-14. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.  
FLORIDA, Jacksonville, June 15-16. Sec., Dr. William M. Rowlett, P. O. Box 786, Tampa.  
GEORGIA, Atlanta, June 10-11. Joint Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol Atlanta.  
HAWAII, Honolulu, July 13-16. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.  
ILLINOIS, Chicago, June 23-26. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.  
INDIANA, Indianapolis, June 23-25. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5 State House Annex, Indianapolis.  
IOWA, Basic Science. Des Moines, July 14. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.  
KANSAS, Topeka, June 16-17. Sec., Board of Medical Registration and Examination, Dr. C. H. Ewing, 609 Broadway, Larned.  
KENTUCKY, Louisville, June 10-12. Sec., State Board of Health, Dr. A. T. McConnack, 532 W. Main St., Louisville.  
MAINE, Augusta, July 7-8. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.  
MARYLAND, Medical (Regular). Baltimore, June 16. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. Medical (Homeopathic). Baltimore, June 9-10. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.  
MASSACHUSETTS, Boston, July 14-16. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413 F. State House, Boston.  
MICHIGAN, Detroit, June 8-10, and Ann Arbor, June 10-12. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.  
MINNESOTA, Minneapolis, June 16-18. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.  
MISSISSIPPI, Jackson, June 22-23. Sec., State Board of Health, Dr. Felix J. Underwood, Jackson.  
NEBRASKA, Omaha, June 9-10. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.  
NEW JERSEY, Trenton, June 16-17. Sec., Dr. Arthur W. Belting, 28 W. State St., Trenton.  
NEW YORK, Albany, Buffalo, New York and Syracuse, June 22-25. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.  
NORTH CAROLINA, Raleigh, June 15. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.  
NORTH DAKOTA, Grand Forks, July 7-10. Sec., Dr. G. M. Williams, 4½ S. 3d St., Grand Forks.  
OHIO, Columbus, June 16-19. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.  
OKLAHOMA, Oklahoma City, June 10-11. Sec., Dr. James D. Osborn Jr., Frederick.  
OREGON, Medical. Portland, June 16-18. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland. Basic Science. Corvallis, July 18. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.  
PENNSYLVANIA, Philadelphia and Pittsburgh, July 7-11. Sec., Board of Medical Education and Licensure, Mr. Clarence E. Ackley, 400 Education Bldg., Harrisburg.  
RHODE ISLAND, Providence, July 2-3. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.  
SOUTH CAROLINA, Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.  
SOUTH DAKOTA, Rapid City, July 21-22. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.  
TEXAS, Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.  
UTAH, Salt Lake City, July 10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.  
VERMONT, Burlington, June 24. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.  
VIRGINIA, Richmond, June 18-20. Sec., Dr. J. W. Preston, 28½ Franklin Rd., Roanoke.  
WASHINGTON, Basic Science. Seattle, July 9-10. Medical. Seattle, July 13-15. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.  
WEST VIRGINIA, Bluefield, July 13. State Health Commissioner, Dr. Arthur E. McClure, Charleston.  
WISCONSIN, Milwaukee, June 30-July 3. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.  
WYOMING, Cheyenne, June 8. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

#### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. Parts I and II. June 22-24 and Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.



## SPECIAL BOARDS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination and review of case histories of Group B candidates will be held in various cities in the United States and Canada Nov. 7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. All applications and case reports must be filed sixty days before date of examination. For information write to Rm. 2021, 58 E. Washington St., Chicago.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Cleveland, Jan. 9. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: Albany, N. Y., June 10, Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 29-30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Cleveland, Sept. 25-27. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

## North Dakota January Report

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the examination held in Grand Forks, Jan. 7-10, 1936. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. Four physicians were licensed by reciprocity and 2 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Rush Medical College.....	(1935)		84.9
University of Louisville School of Medicine.....	(1934)		84
University of Michigan Medical School.....	(1934)		89.5
University of Minnesota Medical School.....	(1929)		85.5
University of Manitoba Faculty of Medicine.....	(1934)		85.3
McGill University Faculty of Medicine.....	(1933)		86.1

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College.....	(1889)		Illinois
State University of Iowa College of Medicine.....	(1926)		Iowa
University of Minnesota Medical School.....	(1933)		Michigan
St. Louis University School of Medicine.....	(1933)		Missouri

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School.....	(1935)		N. B. M. Ex.
University of Minnesota Medical School.....	(1934)		N. B. M. Ex.

## Book Notices

*Your Child in Health and in Sickness.* By Hugh L. Dwyer, M.D., Associate Professor of Pediatrics, University of Kansas. Cloth. Price, \$2.75. Pp. 333, with 38 illustrations. New York & London: Alfred A. Knopf, 1936.

This popular presentation of the home care and feeding of infants and young children "is an attempt to guide the mother to a correct understanding of present day practice in the prevention of diseases in childhood." The advice is sound but too general to be of real help to mothers. The book abounds in technical terms without a glossary. Many of the expressions are colloquial, "fat goes to produce heat" (p. 131); "vitamin C is better understood" (p. 179); "weighing and measuring campaigns" (p. 187); "the infant does not localize pain well" (p. 290). The statement that "this is the most complete book on the care and feeding of children that has as yet been written" is not borne out by its contents. Among the topics lacking are training in the control of bowel and bladder function; home treatment of bad breath, toothache, hiccup, croup, sunburn, frostbite, cat and dog bites; preparation of poultices; the nature of delayed speech, enlarged thymus; differentiation of body build; the management of obesity; home exercises; desirable vacations. The index is inadequate if intended for mothers "looking for help."

Chapter I fails to stress early antepartum supervision. The expression "well balanced diet" (p. 7) has no meaning to the public without explanation and example. Contrary to the author's contention (p. 7), carbohydrates are favorable for the expectant mother in the management of vomiting in pregnancy. "Slow convalescence after the birth of the baby" (p. 8) is not necessarily due to vitamin deficiency. "The first breath" does not "purify the blood" (p. 17). "Complemental feeding" does not "interfere with the natural establishment of the breast milk supply" (p. 21). "Closing of the anterior fontanel before the end of the first year" is not "indicative of some disturbances in the mental development" (p. 61), for many infants

on antirachitic and base-forming feeding normally show closure before the end of the first year. "The most tangible evidence of progress during the first months of life" is not "the gain in weight" (p. 66), for many other criteria of physical and mental growth are equally significant. There are more important causes of delayed walking than "poor nutrition, weak feet or some recent illness" (p. 70). "Sugars and starches" are not "conductive to the development of poor tooth structure" (p. 76). The criteria of normal physical development (p. 81) are inadequate. "Articles of diet" will change "the breast milk in such a way as to have a deleterious effect on the child" (p. 93) if he is allergic. "Tubercular germs" (p. 120) is a misstatement. "Acid milk is more digestible because cow's milk contains buffering substances which must be buffered in the infant's stomach" (p. 122) is meaningless even to a physician; nor is it correct to state that "buffering can be accomplished by adding lactic acid to the milk before feedings" (p. 122). Contrary to the author (p. 132), minerals are as important in the diet of children as in that of infants. Adolescents, for example, gain markedly in their bony structures. "Dental caries" does not necessarily "occur early in children whose diet is deficient in calcium" (p. 132). On the other hand, dental caries may develop even with the adequate intake of vitamin D. Contrary to the author (p. 133), water given freely with meals interferes with mastication, digestion and the intake of food. The discussion on dehydration is needlessly technical (p. 161). Any pediatrician's practice attests the mother's need of more than a fragmentary statement on the "child who will not eat" (p. 171).

Chapter XIII is wholly inadequate on the emotional development of children. The author is amiss about certain psychologic problems as, for example, truthfulness in children (p. 221). There is less material on forming good habits than on preventing bad habits. The treatment of breath holding spells (p. 227) is ancient. The elaborate vaccination technic (p. 266) is intended for physicians, not mothers. The author feels too hopeless about the management of rheumatic diseases (p. 304). The roentgenogram of a nail in the lung is too terrifying to a frightened mother (p. 324). The author recommends zinc stearate powder in the chapter on infancy and yet at the end of the book (p. 327) states that "because it is so poisonous when drawn into the lung, other powders should be used instead of zinc stearate."

*Medical Mycology: Fungous Diseases of Men and Other Mammals.* By Carroll William Dodge, Ph.D., Mycologist, Missouri Botanical Garden, St. Louis. Cloth. Price, \$10. Pp. 900, with 142 illustrations. St. Louis: C. V. Mosby Company, 1935.

The title of this monograph is misleading. The author is not a physician. His references to the medical aspects of mycoses are incidental and brief. The pathology, diagnosis, prognosis and treatment of the diseases arising from fungous infections are not discussed or at the most only briefly noted. The author is not culpable in this, however, but this condition arises as a result of the undeveloped state of this important field of medical science. As one scans the 160 pages of bibliography which the author has painstakingly perfected the critic finds abundant evidence of the scrappy, inadequate, incomplete and all too often duplicating nature of the professedly original contributions to this field. The real fault lies in the defect in medical education. Bacteriology alone dominates the entire field of infectious and communicable diseases and many, if not all, of those teaching it have never had any training at all, or at the most an inadequate one, in the field of mycology. The situation is even less satisfactory in the training of laboratory technicians.

The inadequacy of current information on the polymorphisms, reproduction, cytology, cultural requirements, pathology and serology of the pathogenic fungi are all too apparent in the contents of this monograph by an expert. There is clearly a lack of concerted attack on any one of the important fungous diseases of man. Possibly this is due to the relative absence of lethal infections, to the superficial sites of the major regions of attack, and to the lack, heretofore, of any comprehensive monograph available for the accurate identification of the major fungous pathogens.

The book here presented attempts to meet this need. It is a systematic handbook of the pathogenic fungi of mammals, with

an all too brief outline of their morphology, life history, physiology, culture, isolation, and the microscopic technic essential to their study. A chapter on botanic nomenclature is inserted to warn off medical multipliers of more synonyms of supposedly more new species of fungi. The long tables of such synonyms appearing after the present names of the better known pathogens bear witness to the difficulties of those who faced the problem with an inadequate knowledge of a confused and often contradictory literature.

There is a systematic classification of the orders, families, genera, species and varieties of fungous pathogens of man and other mammals, largely his domesticated and laboratory stock. Each species or variety has a bibliographic synonymy, brief morphologic description, statement of cultural requirements and results, source or organs infected, and, in a few instances, brief references to the pathologic consequences. Only a few (all too few) are figured. Possibly the author knows how misleading a reliance on a single set of figures may be to the clinician or novice.

In view of the resistance of fungus spores, their extreme viability, their wide distribution and the ease with which they contaminate water, food, the air and everything we touch, it is to be expected that almost any pathologic tissue accessible to these agencies might easily become a culture medium of some contaminating fungus. The culturist of fungi himself must use many precautions in isolating the real cause of a mycosis.

The physician using this monograph must make his own index of infected organs, symptoms and diseases. Mycologists will find this monograph a great boon. All others must become mycologists in order to use it. Thus in time, perhaps a long time, a scientific medical mycology of the skin, hair, nails, ears, gums, tonsils, lungs, intestine, genitals, kidneys and lymphatics may eventually emerge. It can be built on this reliable foundation. This book should be a boon to dermatologists, a great stimulus to new investigation and an indispensable aid in accurate diagnoses, mainly by cultural methods.

**Foundations of Short Wave Therapy: Physics—Technics—Indications.** An Introduction to the Physico-Technical Principles and Medical Applications of Short Electric Waves for Physicians and Biologists. Physics and Technics by Wolfgang Holzer, Dr. Ing., Assistant in the Physiological Institute of the University of Vienna. Medical Applications by Eugen Weissenberg, Dr. Med., Medical Superintendent of the Short Wave Section of the University Clinic for Nervous and Mental Diseases in Vienna. Translated by Justina Wilson, F.R.C.P., D.M.R.E., and Charles M. Dowse, B.Sc., A.M.I.E.E. Cloth. Price, 12s. 6d. Pp. 228, with 53 illustrations. London: Hutchinson's Scientific and Technical Publications, 1935.

This book has been prepared in an attempt at collaboration between physicist and physician on the subject of "short wave therapy." The first 155 pages are devoted to a highly technical dissertation on the physics of short wave diathermy, and the text contains a mass of formulas which, though of probable interest to the highly trained physicist, will prove unintelligible to the average physician.

This first section, written by Holzer, the physicist, deals with the theory of oscillation, the action of electrical oscillations and the technic of short wave measurements and short wave therapy. The author favors the electronic valve generator over the spark gap generator. Holzer presents excellent studies on the electrical fields produced by short radio waves and brings out the significant point with regard to absorption of energy that "wavelengths from 10 meters to 1 meter indicate that the heating output is approximately independent of the specific resistance of the treated material." Holzer claims, therefore, that "the heating effects in all organs will be the same." He further points out that, theoretically, there appears to be little hope of producing a selective effect on different tissues by varying wavelengths. Methods of screening the apparatus to prevent radio interference are discussed. Finally, it is interesting to note that it is recommended that the apparatus for generation of short radio waves to be used by the practitioner "should be capable of providing wavelengths from 3.5 to 15 meters." Practically all the machines used at present by American practitioners produce short radio waves of a single wavelength, and machines capable of varying the wavelength are not available. One may agree with the author that "the output of the apparatus in the patient's circuit should be at least 100 watts, and a higher value, say 250 watts, is desirable."

The second section, written by Weissenberg, the physician, is devoted to medical applications of short wave diathermy. This section compares unfavorably with the first. The author seems unaware of the need for controlled clinical studies of large numbers of cases in any attempt to present the possibilities of a new form of therapy. He repeatedly cites only one or two case reports, with no controls to support his contentions. Weissenberg recommends a new form of low output apparatus with which he gives "weak therapy" treatments. In addition to producing heat energy in the tissues, he attributes to short wave diathermy a direct effect on the nervous tissues.

Despite the authors' conclusion that "short wave treatment—provided that indications and technic are correct—is absolutely without risk or danger" and that "it has proved to be extraordinarily efficient in the treatment of certain diseases," the presentation, particularly from the medical standpoint, does not entirely prove their contentions.

It is recommended that every physician practicing physical therapy attempt to struggle through the first portion of this work, which is devoted to physics; but he should read the second portion with some skepticism. Though it does not seem that the book will be of value to the average medical practitioner, it is an interesting contribution to the growing literature on the subject of short wave diathermy.

**History of The Canadian Medical Association, 1867-1921.** By H. E. MacDermot, M.D., F.R.C.P. Cloth. Price, \$3. Pp. 209, with 9 illustrations. Toronto: Murray Printing Company, Limited, 1935.

The history of any organization is obviously the history of the men who have done most to create it. Dr. MacDermot begins his work with a survey of conditions of medical practice in Canada before 1867. He then discusses early attempts at the formation of the Canadian Association and finally its development at Quebec in 1867. The Quebec Medical Society took the chief initiative in the formation. It is interesting to learn that Dr. William Marsden, who was the active mover, was stimulated by visiting the meeting of the American Medical Association in Cincinnati in May of that year. After discussing the earliest annual meetings, the author summarizes the first twenty-five years and then the next two twenty-year periods. He pays special attention to the work of the association during the war, to the reorganization in 1921 and to the development of medical journals in Canada and of other medical organizations, and he concludes his work with studies of important personalities and the citation of committee reports, legislative regulation and similar matters. The appendix also includes a list of members in 1867 and a list of annual meetings. The book has a useful index.

**Short Wave Therapy and General Electro-Therapy.** By Heinrich F. Wolf, Consultant, Department of Physical Therapy, Mount Sinai Hospital, New York. Cloth. Price, \$2.50. Pp. 96, with 79 illustrations. New York: Modern Medical Press, 1935.

This small volume has been prepared for the purpose of "elucidating electrotherapy methods with the aid of pictures." There is a brief discussion of the technic of diathermy and of short wave diathermy. The author still retains the designation "short wave therapy" and does not use the Council on Physical Therapy's term "short wave diathermy." There are likewise brief discussions of hyperpyrexia by means of diathermy, and of the use of "low voltage and low frequency" currents. This is followed by brief descriptions of electrodiagnosis and the application of static electricity, ultraviolet radiation, minor electrosurgery and electrotherapy in otolaryngology and gynecology. The illustrations show methods of applying diathermy electrodes and short wave diathermy plates or coils. While this book is prepared for the "busy practitioner" who "cannot devote much time to theoretical or technical details," the entire presentation is so sketchy that it would seem that the practitioner might be led into many pitfalls. For instance, the author states that in the treatment of rickets by ultraviolet radiation "the entire body, the back and front alternately, is exposed to the light starting with three minutes at a distance of 3 feet, when using the mercury quartz vapor lamp or the carbon arc lamp." If the practitioner happened to be using one of the more powerful mercury quartz vapor lamps, which produce minimal erythema in thirty seconds at a distance of 3 feet, the dosage recommended by the author would be six times the

minimal erythema dose, and a severe burn might be produced. Again, in the discussion of "short wave therapy" the author states that the physiologic effect of short waves "differs from that of diathermy and radiant heat in that with the former the capillaries are dilated strongly and persistently, more than the arterioles and large veins." He presents no proof of this contention and it can hardly be supported by the present studies on the physiologic effects of short wave diathermy. While this small textbook will be of interest to physicians skilled in the use of physical agents in the treatment of disease, it falls far short of its avowed purpose of providing a simple explanation of the methods of application of various electrotherapeutic measures for quick reference by the general practitioner. Many of the methods of applying electric currents recommended by the author have not been thoroughly tested and accepted by practitioners as a whole. The general composition of this book is poor, there is no list of illustrations, the index is sketchy, and there are a number of misspelled words.

*Traité de physiologie normale et pathologique.* Publié sous la direction de G. H. Roger, professeur honoraire de physiologie à la Faculté de médecine de Paris, et Léon Binet, professeur de physiologie à la Faculté de médecine de Paris. Tome X: Physiologie nerveuse (deuxième partie). Par F. Bremer, et al. Fascicules 1 et 2. Boards. Price, 250 francs, per set. Pp. 981; 983-1,579, with 275 illustrations. Paris: Masson & Cie, 1935.

This large volume in two parts keeps up well the standard set by the previous issues of this ambitious work, although the different chapters are of unequal merit. Curiously enough, this monographic treatment of normal and pathologic physiology of the nervous system leaves out the cerebrum entirely, except as it comes in incidentally in the long detailed chapter on the cranial nerves. There is also considerable overlapping in the treatment of material; for example, there is a seventy page chapter on the physiology of the skin, in addition to a long chapter on the cutaneous senses. There is also considerable repetition in the two chapters on the cranial nerves and those on the special senses and the autonomic nervous system. The chapter (107 pages) on speech is really a monograph by itself, written by Professor Froment of Lyons. There is also more anatomy and histology than is usually included in the normal and pathologic physiology of the nervous system in British and American textbooks.

*A Diabetic Primer for Children.* By Ella M. Coleman, B.S., Assistant Dietitian at Mount Sinai Hospital, N. Y., and Alfred E. Fischer, M.D., Adjunct Pediatrician and Chief of the Children's Diabetic Clinic, Mount Sinai Hospital, N. Y. Paper. Pp. 42. New York: The Authors, [n. d.].

Small concise manuals for the diabetic of all ages are of great value. This booklet, the first of its kind for the juvenile patient, gives instructions concerning the principles of diet, metabolism and growth as well as methods of constructing diet, substitutions of foods, analyses of urine, technic and administration of insulin, and the management of coma and hypoglycemia. It could be used in the training of elderly as well as juvenile diabetic patients. Unfortunately, there is no reference to protamine insulin. The latent results of uncontrolled diabetes in childhood could have been emphasized. The authors wisely place the responsibility of treatment with the child.

*Width-Weight Tables for Boys and Girls from 1 to 16 Years; for Men and Women from 17 to 24 Years.* By Helen B. Pryor, M.D., Assistant Medical Examiner (Women), Stanford University. Paper. Price, 60 cents, single copy; 2 to 4 copies, 50 cents each; 5 to 9 copies, 40 cents each; 10 or more copies, 35 cents each. Pp. 15, with tables. Stanford University, California: Stanford University Press; London: Oxford University Press, 1936.

As the author states, the medical profession has long recognized the nutritional status as a factor in determining the state of health. Also the author points out the uselessness of depending on the height-weight-age tables. Then she substitutes a series of tables of her own. As in most of these tables, one cannot place too much dependence on the theoretical normals arrived at by measuring the length of a bone or the distance between two bones. These tables instead of one figure give seven, any one of which may be taken as the proper normal. This table may work well in the hands of experts such as the author, but in the hands of the practicing physician it is merely substituting a newer and more difficult formula for an older one.

*Pathopsychologie der Gefühle und Triebe: Ein Grundriss.* Von Dr. med. et phil. Kurt Schneider, Honorarprofessor an der Universität München. Paper. Price, 1.20 marks. Pp. 28. Leipzig: Georg Thieme, 1935.

This is an interesting little discussion dealing with the relationship of consciousness and instinct. It consists of a presentation of the author's own point of view, differing little from the psychologic functionalists, and stresses a classification of the various mental characteristics and their interrelationships. The first part deals largely with tabulations of sensory and emotional reactions, while the last half describes synthesis of the various traits in psychopathic and abnormal conditions as well as common characteristic and specific emotional states in them. It is an interesting theoretical contribution which is not particularly important.

*Don't Believe It! Says the Doctor. False Notions, Errors, Misconceptions and Misinformation Pertaining to Health and Hygiene. Major Ailments and Cancer, Minor Ailments and Remedies, Food and Diet, Mind and Senses, Body, Marriage and Death; and Health Fallacies Derived from Superstition and Folk-Lore, Explained and Corrected.* By August A. Thomen, M.D., Lecturer in Medicine, College of Medicine, New York University. With foreword by Harlow Brooks, M.D., Visiting Physician, City Hospital, New York. Cloth. Price, \$2.65. Pp. 348. New York: The Author, 1935.

The author has collected into a personally published volume a great deal of common sense material relative to health, but he offers it according to an exceedingly diffuse plan. In other words, by stating a negative on a well established superstition he gives himself opportunity for an extended discussion in the field of hygiene. The same data are much more easily available in better written form in many other currently published books on the subject of health and hygiene.

*Los fundamentos científicos y la práctica de la educación física.* Por el Dr. D. Rafael Alcalá Santaella, catedrático de la Facultad de medicina de la Universidad de Valencia. Paper. Price, 10 pesetas. Pp. 188, with illustrations. Madrid: Casa editorial Bailly-Bailliere, s. a., 1935.

This monograph emphasizes the importance of physical education in the development of a nation. Santaella asserts that the people of Spain need intensive physical training. His book is written primarily for individuals interested or actively engaged in physical education. There is first a summary of the anatomic structures of the human body. The physiology of respiration, the circulation, the nervous and muscular systems are reviewed. In the concluding section many exercises are described suitable to the proper development of the human body. These are the usual "setting-up exercises" taught in American schools.

*Creative Re-Education.* By Frederick Peterson, M.D., Ph.D., LL.D. Cloth. Price, \$1. Pp. 112. New York: G. P. Putnam's Sons, 1936.

The author of this book is one of the leaders in the field of psychiatry, a man who has contributed from time to time greatly to psychiatric knowledge. His knowledge of the subject and his cultural background are vast but are not indicated in the present volume. This is composed of a number of brief essays dealing largely with the principles of education, what schooling should do for persons, and short discussions on various psychologic traits, such as suggestion and the discovery of talents. It is largely cultural and does not have a very distinct bearing on the problems of medicine, even though written by a medical man. The style is flowing, scholarly, cultured, intelligent, but not very commanding. It should be of more interest to teachers than to physicians, although the latter, particularly mental hygienists, might read it for pleasure. One short essay, on occupational therapy, is significant for the psychiatrist.

*Food and Health.* By Henry C. Sherman, Mitchell Professor of Chemistry, Columbia University. Cloth. Price, \$2.50. Pp. 296. New York: Macmillan Company, 1934.

This is a simply written volume by an eminent authority who feels that the average intelligent person ought to have available correct knowledge relative to basic substances in the human diet. He therefore writes in easy-reading English, telling the facts concerning proteins, carbohydrates, fats, minerals, salts and vitamins. The book is printed in large type and offers in a brief space most of what everybody should know on this subject.

**Outposts of Science: A Journey to the Workshops of Our Leading Men of Research.** By Bernard Jaffe. Cloth. Price, \$3.75. Pp. 547, with 77 illustrations. New York: Simon & Schuster, 1935.

The author of this volume has visited many famous laboratories and talked with many famous investigators with a view to collecting first-hand impressions of current research. Among the medical items are those concerned with heredity in cancer, new work on the vitamins and new work on the glands. Mr. Jaffe approaches this subject as a young man with a frantic admiration for science, and his book is therefore stimulating and inspiring. It will be read with pleasure by every physician.

## Bureau of Legal Medicine and Legislation

### MEDICOLEGAL ABSTRACTS

**Compensation of Physicians: Liability for Medical Services Rendered to Tenants.**—The defendant owned and operated a farm on which resided a number of tenants or share-croppers. A Dr. Gephart had for a number of years prior to his death rendered medical services to the defendant and his tenants. The charges for the treatment rendered the tenants were entered in the card system kept by Dr. Gephart under the general entry "Doss Farm" and thereunder specifically to the tenants to whom the professional services were actually rendered. At various times, on receipt of statements of tenants' accounts from Dr. Gephart, the defendant promptly paid the sum called for therein. At the time of Dr. Gephart's death, there remained due him compensation for treatment rendered tenants of the Doss farm over a period of two years. To recover the unpaid balance, the executrix of Dr. Gephart's estate and a physician who had apparently been associated with the deceased brought suit against the defendant. From a judgment for the plaintiffs, the defendant appealed to the Supreme Court of Arkansas.

There was no testimony, said the Supreme Court, that Dr. Gephart rendered professional services to the tenants at the instance or request of the defendant. The charges made by Dr. Gephart in his bookkeeping system were in effect against the tenants and not against the defendant. The entry "Doss Farm," in the opinion of the court, was not a charge against the defendant but was merely an identification used for the purpose of locating the tenants against whom the charges were actually made. The mere fact that the defendant paid to Dr. Gephart sums due by his tenants would not render the defendant liable for all other sums not due, and neither would such circumstances be sufficient to infer a contract therefrom. The testimony, in the opinion of the Supreme Court, was wholly insufficient to show an original undertaking on the part of the defendant to pay for the professional services rendered to his tenants. There was, therefore, no substantial testimony to support the judgment for the plaintiffs, which was consequently reversed and the case dismissed. *Doss v. Gephart (Ark.)*, 88 S. W. (2d) 62.

**Malpractice: Death Under Anesthesia Attributed to Negligent Preoperative Examination.**—Two of the defendants, one the county health director and the other a specialist in diseases of the ear, eye, nose and throat, undertook to remove the tonsils of the plaintiff's 9 year old boy at a clinic conducted by them. During the administration of anesthesia by the third defendant, a lay employee of the specialist, the patient developed what the court referred to as "alarming symptoms" and, despite effort to revive him, died shortly thereafter. The plaintiff, as administrator of the estate of his deceased son, sued the three defendants. The trial court directed a verdict for the defendants, and the plaintiff appealed to the Court of Appeals of Kentucky.

The evidence tended to show that the plaintiff informed the defendants that his son had only recently recovered from influenza, and that he had "rheumatic fever" and "a rheumatic heart." Although the defendant physicians were in possession

of this information, it was contended, they proceeded with the operation without subjecting the boy to a thorough examination to determine his fitness to undergo it. The defendant physicians contended, on the other hand, that what they did was in accordance with the duties imposed by law on them and that the methods employed to ascertain the patient's condition were sufficient for the purpose. A duty devolved on the defendant physicians, said the court, to ascertain whether or not the patient's physical condition was such as to enable him to undergo or withstand any required action as a necessary part of the treatment proposed to be administered. A physician continued the court, who administers or procures the administration of an anesthesia preparatory to a surgical operation is required to possess the same degree of skill and has imposed on him the same obligations as were set forth in *Stevenson v. Yates*, 183 Ky. 196, 208 S. W. 820, as follows:

The law is well settled . . . that a physician or surgeon is answerable for an injury to his patient resulting from want of the requisite knowledge and skill, or from the omission to use reasonable care and diligence in the treatment of the patient or to exercise such care and diligence to discover the patient's malady. [Citations omitted.] Concerning the standard of knowledge and skill and the required care which the physician should possess and exercise under this rule, it is quite generally agreed that he is bound to bestow such reasonable and ordinary care, skill, and diligence as physicians and surgeons in similar neighborhood and surroundings engaged in the same general line of practice ordinarily have and exercise in like cases.

In the present case, said the court, more than one witness testified to facts which, if true, tended to show that the defendant physicians either did not possess the requisite skill to discharge the task they assumed to perform or that they negligently and carelessly exercised their skill. The sufficiency of the evidence to support a verdict either way on a general submission of the case to the jury was not before the court for determination. The sole question was whether the trial court correctly directed the verdict for the defendants. Before a court is authorized to direct a verdict, it should be prepared to say that, admitting as true all the testimony on behalf of the party against whom the verdict is directed; and every fair and reasonable inference that might be deducible from it, he has failed to make out his case. Applying that rule to the evidence in the present case, the Court of Appeals felt impelled to conclude that the trial court erred in directing the jury to return a verdict for the defendant physicians but correctly directed a verdict for the defendant lay anesthetist, since there was no proof that she was not competent to perform the task she undertook, or that she administered an excessive amount of the anesthesia. The judgment was affirmed as to the anesthetist but reversed with respect to the defendant physicians.—*Van Sant's Adm'r v. Overstreet (Ky.)*, 86 S. W. (2d) 1008.

## Society Proceedings

### COMING MEETINGS

- American Association for the Study of Goiter, Chicago, June 8-10. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Corresponding Secretary.
- American Association for the Study of Neoplastic Diseases, Baltimore, June 11-13. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.
- American Pediatric Society, Bolton Landing, N. Y., June 11-13. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.
- American Physiotherapy Association, Los Angeles, June 28-July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.
- Conference of State and Provincial Health Authorities of North America, Vancouver, B. C., June 22-24. Dr. A. J. Chesley, State Department of Health, St. Paul, Minn., Secretary.
- Maine Medical Association, Rangeley, June 21-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.
- Massachusetts Medical Society, Springfield, June 8-10. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.
- Medical Library Association, St. Paul, June 22-24. Miss Janet Doe, 2 E. 103d St., New York, Secretary.
- Montana Medical Association of Billings, July 8-9. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.
- North Pacific Pediatric Society, Victoria, B. C., June 24-25. Dr. M. L. Bridgeman, 1020 S. W. Taylor St., Portland, Ore., Secretary.
- Pacific Northwest Medical Association, Portland, Ore., July 8-11. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.
- West Virginia State Medical Association, Fairmont, June 8-10. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

35:289-428 (March) 1936

- Intubation Studies of Human Small Intestine: V. Motor Effects of Single Clinical Doses of Morphine Sulfate in Normal Subjects. W. O. Abbott and E. P. Pendergrass, Philadelphia.—p. 289.
- Id.: VI. Influence of Variations in Reaction and Motility of Stomach Contents on Reaction and Motility of Intestinal Contents. T. G. Miller and W. G. Karr, Philadelphia.—p. 300.
- Effect of Foodstuffs on Emptying of Normal and Operated Stomach and Small Intestinal Pattern. I. S. Ravdin, E. P. Pendergrass, C. G. Johnston and P. J. Hodes, Philadelphia.—p. 306.
- \*Observations on Small Intestinal Physiology in Presence of Calcified Mesenteric Lymph Nodes. R. Golden, New York.—p. 316.
- Emphysematous Blebs and Bullae. E. Freedman, Cleveland.—p. 324.
- \*Roentgen Treatment of Malignancy Using Filtration Equivalent to 5 Mm. Copper. E. A. Merritt and R. R. Rathbone, Washington, D. C.—p. 334.
- Indications for Radical Surgery of the Breast. H. Auchincloss, New York.—p. 344.
- Place of Interstitial Irradiation in Cancer of the Breast. O. N. Meland, Los Angeles.—p. 348.
- Effect of Preoperative Irradiation in Primary Operable Cancer of the Breast. F. E. Adair, New York.—p. 359.
- Treatment of Inoperable, Recurrent and Metastatic Carcinoma of the Breast. E. T. Leddy and A. U. Desjardins, Rochester, Minn.—p. 371.
- Effect of Ovarian Irradiation on Bone Metastases of Cancer of the Breast. R. Dresser, Boston.—p. 384.
- Effect of Radium Irradiation on Electrophoretic Velocity, Viability and Hydrogen Ion Concentration of *Escherichia Coli* Suspensions. K. P. Dozois, G. E. Ward and F. W. Hachtel, Baltimore.—p. 392.

**Physiology of the Small Intestine in Presence of Calcified Mesenteric Lymph Nodes.**—Golden observed disturbances in the physiology of the small intestine in seven cases which appeared to have been directly associated with calcified mesenteric lymph nodes. The patients suffered from abdominal pain. They all had calcified mesenteric lymph nodes. Spasm in the loop or loops of the small intestine adjacent to the nodes was noted roentgenologically in four cases, and at operation in another case. Delay in the passage of barium at the site of the calcified nodes was found in four cases. A nine hour ileal residue was present in two cases, and a twenty-four hour ileal residue in another two cases. Delay in the ileum was frequently associated with hypermotility of the proximal part of the small intestine. Active reversed peristalsis in the ileum—not a "pendulum" movement—was seen in one case. Delay in the emptying of the stomach, apparently of reflex origin, was found in four cases. The fact that two conditions occur together does not necessarily mean that one causes the other. However, these disturbances in the physiology of the small intestine seemed to take place in loops of intestine directly adjacent to calcified nodes. The puckering and contraction of the mesentery about them and the distortion of the blood vessels make it seem very likely that the nerve fibers are involved in the process. A mechanism for a disturbance in intestinal physiology would seem to be present. One manifestation of abnormal intestinal physiology observed in these cases is spasm, and spasm of the intestine offers at least one possible explanation for pain. Occasionally a patient says that pressure on the calcified node reproduces the pain for which relief is sought.

**Roentgen Treatment of Malignancy.**—From their experience with protracted fractional irradiation with hard radiation (0.21 angstrom maximal wavelength, 5 mm. copper equivalent filter), Merritt and Rathbone believe that there is a differential effect on skin or epidermoid structures as a group in contrast to connective tissue or the supporting body structures as the other group. When 0.5 mm. of copper filtration is used there

is a moderate difference in the lethal dose between skin and the underlying subcutaneous tissues. As the filter is decreased, with a corresponding softening of the beam, the lethal doses for skin and for the underlying connective tissue approach each other, but never meet. Conversely, as the filtration is increased to 5 mm. of copper, there is a marked widening of the lethal doses for skin and for subcutaneous tissue. Thus the authors feel that increasing the filtration is the best method at one's disposal for protecting the underlying subcutaneous tissues when giving a lethal skin dose. In their treatment of superficial malignant disorders they are impressed with the necessity of producing complete destruction of the skin, as they have yet to permanently destroy a squamous cell carcinoma with less than a blistering dose equivalent to a first degree burn. In the production of these reactions for large areas (15 by 5 cm. and over) heavy filtration is a necessity to insure healing. Heavy filtration is neither necessary nor advocated in giving blistering doses to very small areas, unless cartilage is eroded or involved. They base their conclusions on their daily observations in the treatment of skin carcinoma in which they can readily observe the immediate and late effect on both the tumor and the bed of the tumor. A tin filter qualitatively equivalent to 5 mm. of copper is described. Greater use of filtration equivalent to 5 mm. of copper at 220 kilovolts (peak) is advocated. With such filtration inoperable intra-abdominal malignant conditions are now brought into the field of radiotherapy. Four cases are presented which serve to illustrate the possible uses of increased filtration.

### Annals of Otol., Rhinol. and Laryngology, St. Louis

45:1-304 (March) 1936

- \*Surgical Repair of Facial Nerve Paralysis: Clinical Presentation. A. B. Duell, New York.—p. 3.
- After-Care of Surgical Repair of Facial Nerve. T. G. Tickle, New York.—p. 7.
- Resection of Entire Thoracic Esophagus for Carcinoma. H. B. Orton, Newark, N. J.—p. 28.
- Experimental Analysis of Vestibular Pointing Test. R. M. Dorcus, Baltimore, and O. H. Mower, Princeton, N. J.—p. 33.
- Preparing Cadavers for Endoscopy. O. V. Batson, Philadelphia.—p. 58.
- Effect of Radiation on Ciliated Epithelium. L. H. Heine, Boston.—p. 60.
- New Mastoidectomy Incision and Wound Closure. O. J. Dixon, Kansas City.—p. 75.
- Allergy of Upper Air Passages: Inherited and Acquired Factors. L. Felderman, Philadelphia.—p. 80.
- Allergic Rhinitis. A Panel Discussion by L. W. Dean, J. J. Bronfenbrenner, H. L. Alexander, F. K. Hansel, A. W. Proetz, A. M. Alden, W. F. Wenner, H. M. Smit, C. C. Bunch, B. J. McMahon, J. H. Alexander and L. D. Linton.—p. 101.

### Archives of Dermatology and Syphilology, Chicago

33:605-782 (April) 1936

- Dynamics of Cutaneous Morphology: Analytic Study. M. Scholtz, Los Angeles.—p. 605.
- Evaluation of Reducing Agents Used in Dermatologic Practice: I. Intensity of Action. T. Cornbleet, Chicago.—p. 624.
- Deep Secuparioposis of Ulcerating Granuloma Type Confirmed by Culture and Animal Inoculation. A. J. Markley, O. S. Philpott, Denver, and F. D. Weidman, Philadelphia.—p. 627.
- \*So-Called Libman-Sacks Syndrome: Its Relation to Dermatology. G. H. Belote and H. S. V. Ratner, Ann Arbor, Mich.—p. 642.
- Studies in Genus Microsporium: I. Cultural Studies. N. F. Conant, Durham, N. C.—p. 665.
- \*Aleukemic Myelosis with Cutaneous Nodules. E. F. Zimmerman and H. C. Curtis, Wichita, Kan.—p. 684.
- \*Lymphedema Occurring with Varicose Veins: Treatment by Injection. H. I. Biegeleisen, New York.—p. 689.
- Onycholysis. J. D. Viecelli, San Francisco.—p. 697.
- Genesis of Syringoma: Report of Case. H. Homma and D. H. E. Escher, Beirut, Syria.—p. 700.
- Darier-Roussy's Sarcoid, with Especial Reference to Its Tuberculous Etiology. E. R. Maloney and F. C. Combes, New York.—p. 709.
- \*Prevention of Dermatitis Venenata Due to Poison Ivy in Children. M. Melitch and S. Poliakoff, Jamesburg, N. J.—p. 725.

**Relation of Libman-Sacks Syndrome to Dermatology.**—Belote and Ratner cite a case believed to present the Libman-Sacks syndrome. They are impressed with the succession of infections. Otitis media, pyelitis, bronchopneumonia and again otitis media associated with joint symptoms, renal changes and an almost continuously septic type of temperature certainly seem to point to a sepsis, and yet to them one of the striking features of this group of cases, and of their case in particular, is the fact that repeated blood cultures have been negative.

They believe that this group should be classified as a subgroup of the cases presented by Osler. The question as to whether or not this eruption is actually disseminated lupus erythematosus is of extreme importance, for on its correct answer rests the identity of this condition and erythema multiforme. At the present time one cannot say that they are not grades of the same condition. From the clinical standpoint there is not the slightest doubt that the eruption in this condition resembles closely acute or subacute lupus erythematosus disseminatus. From the standpoint of microscopic changes in the skin in this case the authors are faced with a problem. If the views of Goeckerman and Montgomery are accepted the condition almost certainly is in the erythema multiforme group, not in that of acute lupus erythematosus disseminatus. If, however, the view of Satenstein that microscopically there is nothing in acute lupus erythematosus to distinguish it from erythema multiforme is accepted, it could be either. Kidney changes in acute lupus erythematosus disseminatus apparently are more severe and different in type from those shown in their case or those described for the Libman-Sacks syndrome. From the necropsy material the most important fact is the infrequency of endocarditis in cases in which lupus erythematosus disseminatus was diagnosed before death. When it is realized that, regardless of the changing concept, the original cases of the Libman-Sacks syndrome were predicated on the observation of an unusual verrucous endocarditis at necropsy, it lends color to the belief that this eruption probably is not lupus erythematosus disseminatus. The authors draw the following conclusions, which may be amenable to correction: 1. The so-called Libman-Sacks syndrome is a subvariety of the Osler erythema group. 2. The lupus erythematosus-like eruption of the Libman-Sacks syndrome is erythema multiforme, representing a bacteria-free phase of a previous sepsis.

**Aleukemic Myelosis with Cutaneous Nodules.**—Zimmerman and Curtis encountered a case of aleukemic myelosis with cutaneous nodules in which the white blood cell count was reduced from 300,000 to 3,000 by irradiation; it remained at that level for several weeks and then slowly rose to 178,000. During this remission no immature cells were noted in the blood smears, and the patient's physical condition improved remarkably. The case was characterized by a sudden onset of hemorrhagic purpura, resulting in rapidly developing and fatal anemia. The absence of palpable glandular hyperplasia and the presence of the most immature type of white blood cells were noteworthy clinical observations. In a case of the diffuse form of an aleukemic process, diagnosis of the type may be difficult because of the immaturity of the cells. The stem cells containing no granules give a negative reaction for oxidase. This was the authors' experience in their case. After a transfusion of blood, some of the immature cells higher in the stage of development, such as myelocytes, stained characteristically, while the blast forms remained unstained. Schultze's modification of the indophenol blue synthesis, which causes a positive reaction in a case of myeloid leukemia and a negative reaction in a case of lymphatic leukemia, is of diagnostic aid. The life expectancy in the most favorable case is less than six months. Roentgen therapy is contraindicated, and transfusions of blood accord only a temporary arrest of the fatal termination in most cases. In a negligible few the chronic form is induced.

**Lymphedema Occurring with Varicose Veins.**—Biegeleisen purposes to trace the chronic disorder of lymphedema back to its source and to present a new mode of therapy for its relief. The name lymphedema describes only the first stage of the disorder. The end stage is fibrosis, and therefore the whole picture would be more aptly termed fibrolymphedema. The intimate relationship of the venous and lymphatic vessels in the lower extremity was amply brought out by Cruikshank. Phlebitis may cause lymphatic infection, with resulting lymph stasis. This lymphatic block is responsible for the alteration of the tissue known as lymphedema. The lymphatic system may be disturbed by other causes (cutaneous infection by an organism, trauma, filariasis and congenital lymphatic disorders). Whatever its origin, the end result is always the same. Obvious painful phlebitis may precede the hardened discolored lesion or the lesion may supervene on a latent phlebitis to cause an apparently idiopathic lesion. Varicose ulcers may

also be the starting point of lymphedema. In this type of involvement the cutaneous infection travels directly into the lymphatics. Once an ulcer is established in an area of lymphedema, healing is obstinate and rare. The lymphedematous process tends to advance. With widespread lymphedema of the entire leg, a condition of elephantiasis may be said to be present. In a case of elephantiasis accompanying varicose veins one does not encounter those acute crises of pain and fever that are noted in cases of other types of the disease. The author's technic, which he has used more than 500 times, attacks the seat of the disturbance in a direct fashion: The principle of the treatment is to open the strangulated lymphatic and capillary circulation. This is done by the injection of Locke's modification of sodium chloride solution through a 13 gage needle with a large bore, directly into the lymphedematous area. Injections are given as often as possible, since they do not inconvenience the patient. A reaction does not occur; the latent infection which is residual in the lymphedematous area is never aroused. In cases of both lymphedema and elephantiasis, subjective improvement is marked after the first few treatments. The pain in a case of lymphedema disappears, and the leg feels lighter and more natural. In every case in which the treatment has been persistently applied, the tissues have first become softer. With the softening of the tissues, the pigmentation becomes lighter and sometimes disappears completely. Lymphatic ulcers clear up definitely. The parts treated become less tender, and the patient loses the leathery sensation that existed before the treatment. The spread of the lymphedematous process stops. The end results obtained depend on the amount of healthy fibrous tissue present in the area, the size of the lesion and the persistence of treatment. The mode of action of this form of therapy is not clear. The results obtained have been so uniformly gratifying that the author presents this report to encourage further study.

**Prevention of Dermatitis Venenata.**—Molitch and Poliakoff tested the efficacy of poison ivy extract for purposes of immunization. The product used was an alcoholic extract (1:50) of the poison ivy plant made according to the method of Spain and Cooke. Patch tests were done on 292 boys with poison ivy extract in a dilution of 1:100, with an incidence of 22.9 per cent positive reactions. A majority of the boys with positive reactions also gave a history of previous attacks. Forty boys with positive reactions to the patch tests were given injections of poison ivy extract during the entire season, and not one had dermatitis venenata during the course of treatment. Fifty-three children who were not treated contracted ivy poisoning. It is recommended that all children with a history of previous attacks of ivy poisoning be given injections of poison ivy extract during the period of exposure to the plant.

### Iowa State Medical Society Journal, Des Moines

26: 171-230 (April) 1936

- Influence of Environmental Factors on Posture, with Especial Reference to Psychic Experiences. W. Malamud, Iowa City.—p. 183.  
 Indications for Removal of Tonsils and Adenoids. L. M. Downing, Cedar Rapids.—p. 187.  
 Diarrhea in Infants and Young Children. R. H. McBride, Sioux City.—p. 190.  
 \*Gastro-Intestinal Allergy and Migraine in Childhood. M. D. Ott, Davenport.—p. 192.  
 The Management of the Prematurely Born Infant. J. D. Boyd, Iowa City.—p. 194.  
 Present Status of Serotherapy in Whooping Cough, Measles, Scarlet Fever and Diphtheria. L. F. Hill, Des Moines.—p. 197.  
 Sense Defects of Children. Martha M. Link, Dubuque.—p. 201.  
 Heart Diseases in Workmen's Compensation Litigation. K. Garve, Los Angeles.—p. 204.  
 Regional Ileitis: Case Report. W. L. Downing and C. V. Allen, Le Mars.—p. 206.

**Gastro-Intestinal Allergy in Childhood.**—Ott is convinced that a great many of the cases of colic in infancy are merely manifestations of food allergy. This is true even in the breast fed infant, as the offending proteins may be excreted in the breast milk. When the gastro-intestinal disturbance is associated with eczema, even in the mildest degree, this probability is greatly increased. Allergic disturbances due to foods may simulate practically any disorder of the gastro-intestinal tract and allergy must be ruled out in any individual who is known to be allergic. During recent years migraine has been



added to the list of disorders that may be allergic. While no one contends that all migraines are allergic, evidence is accumulating that many of them are. The symptomatology in childhood often varies from that in adults in that the headache may be very slight and entirely overlooked. These children often complain of "dizziness" rather than a headache, but as they grow older the dizziness is replaced by the typical headache. Furthermore in migraine in children there is a picture of periodic gastro-intestinal upsets associated with all the symptoms of migraine which may be overlooked, because the headache is not a predominating symptom. The fact that the child has any headache whatever may be elicited with difficulty and only after careful questioning. Children who have or have had cyclic vomiting commonly develop migraine in later years. The symptomatology of cyclic vomiting and migraine are identical except for the symptom of headache. The author agrees with Balyeat when he states that "symptoms diagnosed as cyclic vomiting in a child with other allergic diseases or whose family tree is saturated with allergy mean migraine." Three cases of migraine are presented in which almost complete relief was obtained by the elimination of certain foods from the diet.

### Journal of Bacteriology, Baltimore

31: 217-322 (March) 1936

- Study of Species *Lactobacillus Plantarum* (Orla-Jensen) Bergey et Al. C. S. Pederson, Geneva, N. Y.—p. 217.  
Detection of Nitrate Reduction. H. J. Conn, Geneva, N. Y.—p. 225.  
Effect of Electrolytes Present in Growth Mediums on Electrophoretic Mobility of *Escherichia Coli*. J. T. Pedlow and M. W. Lisse, State College, Pa.—p. 235.  
Concerning Nature of Globoid Bodies. G. A. Logrippo, Philadelphia.—p. 245.  
Gram-Negative Bacilli of Genus *Bacteroides*. J. C. Henthorpe, L. Thompson, Rochester, Minn., and D. C. Beaver, Detroit.—p. 255.  
Effect of Certain X-Rays on Electrophoretic Mobility of *Escherichia Coli*. Margaret E. Smith, M. W. Lisse and W. P. Davey, State College, Pa.—p. 275.  
Bacterial Growth at Constant Hydrogen Ion Concentration: Quantitative Studies on Physiology of *Lactobacillus Acidophilus*. L. G. Longworth and D. A. MacInnes, New York.—p. 287.  
Fermentation of Cellobiose by Bacteria. R. P. Tittler and L. A. Sandholzer, Rochester, N. Y.—p. 301.  
Fermentative Variability of *Shigella Paradyseriae* Sonne. H. J. Sears and M. Schoolnik, Portland, Ore.—p. 309.  
Classification of Group of *Escherichia* Isolated from Intestinal Tract of Patients with Ulcerative Colitis. Edith E. Nicholls and H. P. Saltz, New York.—p. 313.

### Journal Industrial Hygiene and Toxicology, Baltimore

18: 175-276 (April) 1936

- \*Experiments on Physiologic Properties of Trichlorethylene. H. Taylor, Runcorn, England.—p. 175.  
Determination of Injurious Constituents in Industrial Atmospheres: II. Determination of Solvent Vapors in Air by Means of Activated Charcoal. W. A. Cook and A. L. Coleman, Hartford, Conn.—p. 194.  
Influence of Working Hours on Health of Worker. L. Ascher, Frankfurt-on-Main, Germany.—p. 211.  
Examination of Three Hundred Workers in Granite and Sandstone Quarries. S. V. Gudjonsson, with assistance of K. Becker, Copenhagen, Denmark.—p. 215.  
Pulmonary Asbestosis: Incidence and Prognosis. J. Donnelly, Huntersville, N. C.—p. 222.  
Survey of Group of Employees Exposed to Asbestos Dust. S. B. McPheeters, Charlotte, N. C.—p. 229.  
2-Chloro-Butadiene (Chloroprene): Its Toxicity and Pathology and Mechanism of Its Action. W. F. von Oettingen, W. C. Hueper, W. Deichmann-Gruetler and F. H. Wiley, Wilmington, Del.—p. 240.  
Toxicity and Potential Dangers of Crude "Duprene." W. F. von Oettingen and W. Deichmann-Gruetler, Wilmington, Del.—p. 271.

**The Chronic Effects of Trichlorethylene.**—Taylor investigated the chronic effects of trichlorethylene. Preliminary experiments showed that concentrations in air of 0.5 and 0.4 per cent trichlorethylene vapor produced deep anesthesia in rats, while 0.2 per cent gave only slight narcosis. As a result of these experiments the chronic effects of trichlorethylene were investigated at concentrations of 0.3, 0.2, 0.1 and 0.05 per cent, respectively, with rats as the experimental animals. Two dogs were also exposed to 0.2 per cent trichlorethylene. The experiments were continued for six months, the exposure lasting six hours each day, five days a week. A concentration of 0.3 per cent proved too high and only two of the original six rats survived six months. All the animals in the other concentrations survived with the exception of one accidentally killed in the 0.05 per cent concentration. There was no significant difference between growth curves and similar ones for litter mate controls. Histologic examinations of the livers,

kidneys, lungs, tracheas, hearts, spleens, brains and femurs of the experimental rats gave no signs of degeneration in any of the organs. The only abnormal feature observed was a slightly greater tendency to alveolar collapse in the experimental rats as compared with the controls. There was no consolidation or edema. This collapse is generally observed in laboratory rats, and it appears that there is no evidence that the collapse was due to trichlorethylene.

### Journal of Pediatrics, St. Louis

S: 277-402 (March) 1936

- Effects of Posterior Pituitary Extract on Water and Mineral Exchanges in Edema. I. McQuarrie, W. H. Thompson and Mildred R. Ziegler, Minneapolis.—p. 277.  
Generalized Tuberculosis of Lymph Nodes and Multiple Cystic Tuberculosis of Bones: Report of Two Cases. A. W. Jacobsen, Buffalo.—p. 292.  
\*Further Observations on Comparative Antirachitic Value of Crystalline Vitamin D Administered in Milk, in Corn Oil or in Propylene Glycol. J. M. Lewis, New York.—p. 308.  
Lead Encephalopathy in Children. A. Levinson and L. H. Harris, Chicago.—p. 315.  
Hemolytic Jaundice with Bone Changes: Case. C. E. Snelling and A. Brown, Toronto.—p. 330.  
Cutaneous Lymphoblastoma: Case Report. R. K. Maddock, Honolulu, Hawaii.—p. 338.  
Volvulus of Duodenum in the New-Born. A. H. Potter, Springfield, Ohio.—p. 346.  
Calcium Deposition Following Intramuscular Administration of Calcium Gluconate: Report of Case in a New-Born Infant. F. H. von Hofe and R. E. Jennings, East Orange, N. J.—p. 348.  
Clinical Study of Influence of Vitamin B Supplements: I. Growth and Development During Infancy: II. Maternal Health During Gestation and Labor: III. Lactation. H. L. Elias, Rockville Center, Long Island, N. Y., and R. Turner, New York.—p. 352.  
Treatment of Unusual Case of Hemolytic Streptococcal Septicemia: Notes. P. Nicholson, Ardmore, Pa.—p. 363.  
Study of Neonatal Mortality: Based on 120,726 Consecutive Deliveries at the Boston Lying-In Hospital from 1873 through 1934. S. H. Clifford, Boston.—p. 367.  
The Changing Pediatric Practice. H. E. Stafford, Oakland, Calif.—p. 375.

**Antirachitic Value of Crystalline Vitamin D.**—To determine the prophylactic dosage of crystalline vitamin D, as well as the influence of the menstruum on the effectiveness of this antirachitic substance, Lewis gave 441 young infants, at the beginning of the winter, 145, 290 or 1,450 U. S. P. X (revised 1934) units of crystalline vitamin D incorporated in 28 ounces (840 cc.) of milk, in 7 drops (0.5 cc.) of corn oil or propylene glycol. At the end of the winter the results demonstrated that rickets developed less frequently in infants receiving crystalline vitamin D in the daily ration of milk than in those receiving a comparable number of units of this antirachitic agent in 7 drops of corn oil or of propylene glycol. It was found that 1,450 units of crystalline vitamin D in oil daily protected forty-one of forty-two infants against rickets. The addition of 332 U. S. P. units of crystalline vitamin D to the quart of milk provided a highly satisfactory antirachitic, milk since only one of fifty-one infants receiving milk of this unitage developed rickets.

### Kansas Medical Society Journal, Topeka

37: 133-176 (April) 1936

- Self Mutilation in Paranoia. N. Reider, Topeka.—p. 133.  
Newer Aspects of Prostatic Surgery. C. K. Smith, Kansas City.—p. 137.  
Agranulocytosis: Heavy Parenteral Liver Extract Therapy. H. N. Tihen, Wichita.—p. 142.  
\*Idiopathic Hypochromic Anemia. M. Snyder, Salina.—p. 143.  
Use of Roentgen Ray in Diagnosis of Ileus. H. H. Schneider, Kansas City.—p. 148.

**Idiopathic Hypochromic Anemia.**—Snyder suggests that in the majority of patients with idiopathic hypochromic anemia there is no history of dietary deficiency and there are many points suggesting that the condition is due to some difficulty in the absorption or utilization of iron by the body. Achlorhydria is almost a constant observation in this condition as it is in pernicious anemia and, as has been pointed out by many, the achlorhydria may be indicative of some defect in the stomach resulting in the diminution of a substance in the gastric secretion that is necessary in the digestion of iron containing foods. Absence or reduction of this element could, by creating a state of iron deficiency in the body, produce anemia

of varying degrees just as absence of the X factor in the gastric secretions will cause pernicious anemia. Whether there is a direct relationship of achlorhydria to this type of anemia is a moot question. It is agreed that anemia is much more common among patients with achlorhydria than among those with normal gastric acidity. That the achlorhydria is merely an indicator of some missing substance in the stomach necessary for normal blood formation appears to be a more likely conception. While the symptomatology of the two diseases is somewhat alike, the blood shows almost directly opposite changes. The two diseases should offer little diagnostic confusion except in an atypical or borderline case. Hypochromic anemia with achlorhydria due to loss of blood, infections or toxemias should not be classified with the idiopathic group but should be called secondary hypochromic anemia or symptomatic achlorhydric anemia. The disease responds in a striking manner to adequate iron therapy. A case is reported that required unusually large doses of iron permanently.

### Kentucky Medical Journal, Bowling Green

34: 129-168 (April) 1936

- Contract Practice. R. E. Smith, Henderson.—p. 131.  
Analgesia in Obstetrics. S. D. Breckinridge, Lexington.—p. 138.  
Resuscitation of the New-Born. C. S. Sherman, Millwood.—p. 141.  
Postpuerperal Treatment. A. W. Davis, Madisonville.—p. 142.  
Arachnidism and Treatment. D. L. Jones, Fulton.—p. 146.  
Favus: Report of Case. W. U. Rutledge, Louisville.—p. 149.  
Pulmonary Moniliasis: Report of Case. M. Flexner, Louisville.—p. 151.  
Present Day Problems with Typhoid Fever. H. S. Frazier, Louisville.—p. 156.

### Puerto Rico J. Pub. Health & Trop. Med., San Juan

11: 369-638 (March) 1936

- Hematologic Studies on Schistosomiasis Mansonii in Puerto Rico. R. Rodríguez Molina and J. A. Pons, San Juan.—p. 369.  
Methods Used to Control Malaria in Puerto Rico. W. C. Earle, L. D. Palacios and A. Arbona, San Juan.—p. 434.  
\*Forms of Pulmonary Tuberculosis in Puerto Rico. J. Rodríguez Pastor and G. Ruiz Cestero, San Juan.—p. 479.  
Tuberculosis in Puertoricans: Review of Six Hundred and Twenty-Eight Autopsies. E. Koppisch, San Juan.—p. 492.  
Bacteriologic Study of Normal Throats, Pathologic Throats and Excised Tonsils, Made in Puerto Rico. A. Pomaes Lebrón, San Juan.—p. 512.  
Bacteriology of Plague: Review. P. Morales Otero, San Juan.—p. 553.  
Protoplasmic Longevity, with Particular Reference to Protozoa. G. N. Calkins, New York.—p. 617.

**Pulmonary Tuberculosis in Puerto Rico.**—Rodríguez Pastor and Ruiz Cestero interpreted the roentgenograms of the chests of 1,000 Puerto Rican patients suffering from pulmonary tuberculosis. One or both apexes were involved in 82 per cent of the cases, the right apex being affected nearly twice as often as the left. In 18 per cent the apexes were clear. The lesions were limited to the upper third of one or both lungs in 46 per cent, to the middle third in 9 per cent and to the lower third in 1.5 per cent. Involvement of the upper two thirds of one or both lungs occurred fourteen times more frequently than involvement of the lower two thirds. In 8 per cent both lungs were involved. The preponderant form of tuberculosis was the fibrocaceous. In 48 per cent, exudative infiltration predominated, while in 52 per cent fibrous infiltration was equal in extent or predominated over the destructive processes. Although patches of caseous pneumonic infiltration were frequent, massive tuberculous pneumonias were distinctly rare. No significant differences could be made out between the forms of tuberculosis occurring in white patients as distinguished from that in Negro patients. Cavities were found in 56 per cent and occurred in 48 per cent more frequently in the right lung than in the left. The frequent location of cavities was the upper thirds of the lungs; next, the middle thirds. Peaking of the diaphragm, marked blurring of the cardiophrenic angle and similar diaphragmatic irregularities interpreted as adhesions were evident in 59 per cent. They were visible six times more frequently in the right than in the left side. Marked deformities due to fibrous tissue, such as displacement of the heart and trachea, were found in 8 per cent of the cases. Total atelectasis of one lung was present in forty cases. Pleural effusions were encountered in only eight cases.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

1: 349-400 (Feb. 22) 1936

- Avoidable Disasters. G. R. Girdlestone.—p. 349.  
Radiologic Examination of Stomach and Duodenum, with Especial Reference to Early Diagnosis of Cancer. K. S. Cross.—p. 353.  
Dercum's Disease and Its Treatment by Deep X-Rays: Case. S. K. Montgomery.—p. 357.  
Cesarean Section in Infected Cases: Series of Forty-Five Cesarean Sections in Infected or Potentially Infected Cases, with No Maternal Mortality. Margaret M. Basden.—p. 358.  
\*Von Gierke's Disease Associated with Amylorrhea. A. E. Naish and T. E. Gumpert.—p. 360.  
Ascheim-Zondek Test in Puerperium. F. A. E. Crew.—p. 363.

**Von Gierke's Disease Associated with Amylorrhea.**—Naish and Gumpert describe a case of von Gierke's (glycogen accumulation) disease in which the presence of amylorrhea, a new manifestation, was observed. They suggest that there are in this condition an inability on the part of the liver to convert animal starch (glycogen) into dextrose and an impaired digestion of vegetable starch in the intestine. Possible mechanisms are discussed, and it is suggested that there is either (1) a disturbance of the  $pH$  in the immediate neighborhood of the glycogen in the liver cells and in the immediate neighborhood of the starch grains in the intestine or (2) an endocrine disturbance, quite distinct from the more familiar ones in that the balance which normally exists between the carbohydrate metabolism hormone of the anterior lobe of the pituitary and insulin is upset. Experimental and clinical observations give strong support to the endocrine theory of origin of this condition. They suggest that the normal balance which obtains between the pituitary body and insulin is disturbed. To account for the amylorrhea is more difficult. So far as the authors know, neither the pituitary body nor its satellites (the adrenal and the thyroid) are concerned with the intestinal digestion of starch, but it has been shown recently by Dodds and his co-workers that the posterior lobe of the pituitary body contains a substance capable of inducing a severe lesion of the acid-bearing area of the stomach—sometimes hemorrhagic and sometimes of the nature of a chronic ulcer. Furthermore, the stomach of an animal that has received an injection of this pituitary extract will not yield hydrochloric acid even after the injection of histamine. It is therefore not inconceivable that the pituitary may have some relation to the interaction of amylase and starch in the small intestine, if only from the point of view of hydrogen ion concentration.

### Journal of Physiology, London

86: 117-228 (Feb. 8) 1936

- Electrical Studies on the Frog's Labyrinth. D. A. Ross.—p. 117.  
Solvent Water in Mammalian Erythrocyte. J. Macleod and E. Ponder.—p. 147.  
Method for Determination of Carbon Dioxide Applicable to Blood and Tissues. G. V. Anrep, M. S. Ayadi and M. Talaat.—p. 153.  
Effect of Potassium on Excitability and Resting Metabolism of Frog's Muscle. D. Y. Solandt.—p. 162.  
Uterine Changes in Experimental Abortion and Their Relation to Parturition. J. M. Robson.—p. 171.  
Influence of Thyroid Feeding on Nembutal Poisoning. E. M. Scarborough.—p. 183.  
Anterior Pituitary Extracts and Liver Fat. C. H. Best and J. Campbell.—p. 190.  
\*Effect of Water Intake on Human Reactions to Reduced Cooling Powers. R. A. Gregory and D. H. K. Lee.—p. 204.  
Action of Adrenalin on Serum Potassium. J. L. D'Silva.—p. 219.

**Water Intake and Reduced Cooling Powers.**—Gregory and Lee describe experiments in which unacclimatized male subjects were exposed to an atmosphere of 95 F. "effective temperature" for six hours and given 100 or 150 cc. of water to drink at intervals of fifteen minutes. It was found that: 1. Maintenance of bodily hydration markedly increases the stability of the thermal equilibrium and reduces the degree of shift of the equilibrium point. 2. The rate of sweating is somewhat increased in the water fed as compared with the subject deprived of water; this may be sufficient to account for the differences in thermal behavior. 3. The circulatory functions are rendered more efficient by hydration, as shown by the increased stability of cardiac rate, its lowered deviation

from normal and the reduction of symptoms referable to inefficient circulation. 4. There is a definite reduction of urinary chloride excretion during exposure to heat, no matter what the urinary volume. 5. Apart from the concentration of blood consequent on dehydration, there tends to be a decrease during exposure to heat of the ratio between water and protein in the serum. 6. Reduction of urine output below the normal "basal" level found in temperate atmospheres will not occur before a certain level of body dehydration is achieved. 7. Certain disturbances in the acid-base equilibrium of venous blood reduction of carbon dioxide combining power and carbon dioxide content tend to occur during exposure to moderate heat.

### Journal of State Medicine, London

44: 125-186 (March) 1936

- Endemic Influenza Prevalences of the Three Years 1933, 1934 and 1935, Together with Some Comments Thereon, in the Light of Recent Literature Concerning Influenza. W. H. Hamer.—p. 125.  
Public Health Administration in Bermondsey (Past and Present). D. M. Connan.—p. 146.  
The Human Element in Factory Efficiency. R. G. Berchem.—p. 169.

### Lancet, London

1: 409-462 (Feb. 22) 1936

- John Hunter to John Hilton. C. H. Fagge.—p. 409.  
Expulsive Force of Uterus During Labor. C. Moir.—p. 414.  
What Is Scarlet Fever for the Clinician? F. G. Hobson.—p. 417.  
Intravenous Anesthesia with Pentothal Sodium. R. Jarman and A. L. Abel.—p. 422.  
Treatment of Psychoses by Prolonged Narcosis. D. N. Parfitt.—p. 424.

**Scarlet Fever and the Clinician.**—Hobson quotes clinical cases which he believes prove that: 1. An erythema is inconstant in infections due to a hemolytic streptococcus. 2. It may be a feature of those due to a nonhemolytic streptococcus. 3. Though it is more frequent in infections due to hemolytic streptococci, it is a poor guide to the course, prognosis or infectivity of the disease in a given patient. 4. Infections due to hemolytic streptococci with or without an erythema are generally highly toxic and highly infectious and have a striking association with sequels of all kinds. The appearance of an erythema is probably a favorable sign. 5. An infection due to a nonhemolytic streptococcus may have sequels in no way distinguishable from those due to a hemolytic strain, whether there is an erythema or not. If the foregoing statements and conclusions are sound, the author believes that it is pertinent to consider what alterations or modifications of clinical practice and teaching should be introduced. 1. The executive and primary object of notification is to segregate those liable to spread an epidemic disease. It is admitted by every medical officer of health that strict hospitalization in cases of streptococcal fever in which a rash develops has completely failed to control epidemics, and this is supported by clinical evidence. The notification of "scarlet fever" as at present practiced serves no useful purpose. It confines valuable hospital accommodation to a selected group. The accommodation could be better employed for cases of streptococcal infections selected on clinical grounds or for domestic reasons rather than by an erythema. A much higher standard of isolation is essential because the inmates are not all suffering from the same disease. 2. The public is still prone to regard tonsillitis as a trivial complaint and is still uninformed of the disasters that may follow the neglect of simple precautions; the profession has in this respect neglected its educational function. Isolation of the patient in the home, the use of separate feeding utensils and masking or gargling by the attendants are generally neglected and should be enforced. To confine patients to bed for a minimum of from seven to ten days and to examine the urine in the third week are two measures of obvious clinical value. 3. The use of a swab as a public health measure could, with value to the clinician, be employed not only to identify the Klebs-Löffler bacillus but also the hemolytic or nonhemolytic streptococcus. 4. An increasing number of experienced clinicians believe that it is of proved value to give so-called antiscarlatinal serum in the early therapy of infections due to hemolytic streptococci to relieve symptoms and to prevent complications. The public health service should therefore provide the serum for use in hemolytic infections on the same basis as it provides serum for the treatment of diphtheria.

### Presse Médicale, Paris

44: 425-448 (March 14) 1936

- Atelectasis and Massive Collapse. Y. Henderson.—p. 425.  
\*Diagnosis of Pancreatic Disorders by Test of Purified Secretin. M. Chiray and M. Bolgert.—p. 428.  
\*Artificially Produced Hyperchloridemia. R. S. Mach and F. Sciclounoff.—p. 431.

**Diagnosis of Pancreatic Disorders.**—Chiray and Bolgert discuss the imperfections and the physiologic tests of the pancreatic function. They propose a new technic for studying the pancreatic secretion. It involves the intravenous injection of two ampules of secretion with the subsequent withdrawal of bile from the duodenum. The lipase and trypsin are estimated by the usual method, but, instead of expressing the results as a curve for each diastase, the arithmetical mean is estimated and recorded. Thus the lowest lipase and the lowest trypsin activities are determined. The authors conclude from their studies that, if the lowest diastatic activity is normal with a normal volume or above normal volume, no correction is necessary. If the diastatic activity is lower with a normal or low volume, still no correction is necessary. On the other hand, if the volume is higher, the coefficient has to be divided by 0.7 in order to obtain an approximate value for a volume of 100 cc. If the diastatic activity is normal with a volume below 70 cc., the coefficient is divided by 1.4 for a volume between 70 and 35 cc. and by 2 for a volume around 25 cc. Whatever the value of the lowest diastatic activity, if the volume is above 200 cc., the correction must be made by following a given arithmetical formula.

**Artificially Produced Hyperchloridemia.**—Mach and Sciclounoff attempted to find a method of replacing the isolated measurement of the blood chloride by a functional test which employs the rapidity of absorption of the injection of these salts. They studied in normal persons and in patients in a state of hypochloridemia the blood chloride level after the intravenous injection of 8 Gm. of sodium chloride. They concluded from their observations that sodium chloride injected in the veins of a normal subject disappears from the blood in a few minutes and is fixed in the tissues. Sodium chloride injected in the veins of a subject in a state of hypochloridemia produces an ephemeral elevation of the blood chloride which in one hour practically returns to its original level. The level of the blood chloride in the rechloridated subject does not depend on the value of the dose injected but on the affinity of the tissues for the sodium chloride and their state of saturation. In the course of a treatment of rechloridation by daily injection of sodium chloride the blood chloride is raised slowly and according to the degree to which the tissues are saturated.

### Archivio Italiano di Chirurgia, Bologna

42: 581-666 (April) 1936

- \*Heterotopic Osteogenesis from Epithelium of Urinary Tract. E. Lucinisco and G. F. Cavalli.—p. 581.  
Complete Paralysis of Radial Nerve: Surgical Treatment. G. M. Giuliani.—p. 613.  
Influence of Vitamins on Healing of Wounds: Experiments. A. Padula.—p. 627.  
Granulomas from Lycopodium and Talcum Powders Following Laparotomy: Experiments. F. Grieco.—p. 641.

**Heterotopic Osteogenesis from Epithelium of Urinary Tract.**—Lucinisco and Cavalli report the results of experiments in dogs and rabbits for the production of heterotopic ossification obtained by the following procedures: (1) transplantation of epithelium of the urinary tract (mucosa of the bladder, the ureter and the renal pelvis) into young connective tissues, (2) transplantation of fascia lata into vesical defects and (3) interruption of renal blood circulation by ligation of the renal vessels. The authors conclude that the epithelium of the urinary tract has the property of producing heterotopic ossification of young connective tissues. The property seems to be due to a substance secreted or liberated by the urinary epithelium, which causes precipitation of calcium salts on the collagen fibers. Heterotopic ossification obtained by ligation of the renal vessels is identical to that obtained by transplantation of fascia into vesical defects or urinary epithelium into connective tissues. In all cases the bone metaplasia is due to the presence of urinary epithelium and it takes place in the connective tissues in the vicinity of the epithelium, either trans-

planted (transplantation of urinary epithelium) or naturally present in the structure (transplantation of fascia into vesical defects and ligation of renal vessels), but in both cases without the presence of preexisting bone cells. Osteoblasts from fibroblasts make their appearance when precipitation and fixation of calcium first take place. The classic epithelial disposition of osteoblasts around the connective tissues in process of ossification is seen only in rare cases. Periosteum is a differentiated element of the connective tissues which surrounds the bone formation late in the process of ossification, in which it seems to play no osteogenic part. In the process of ossification bone trabeculae surround the ossifying zones, in the center of which a thin net of histiocytes and cells of bone marrow with the typical characteristics of young bone tissue appear.

### Revista Médica Latino-Americana, Buenos Aires

21: 409-507 (Jan.) 1936

- \*Treatment of Gonorrhea in Women by Basic Fuchsin. R. Araya.—p. 409.  
 Dysgerminoma of Ovary: Case. J. C. Ahumada, O. Prestini and A. E. Nogués.—p. 433.  
 Significance of Elevation of Hilus in Cirrhosis of Upper Lobe of Lung. A. A. Cetrángolo and H. A. Passalacqua.—p. 444.  
 Dosage of Vitamin C. O. F. F. Nicola.—p. 459.  
 Action of Climate of Cosquín in Pulmonary Diseases. J. F. Mieres and A. Cima.—p. 465.

**Treatment of Gonorrhea by Basic Fuchsin.**—Araya reports satisfactory results from the use of a combined treatment of basic fuchsin (parafuchsin methylhydrochlorate or parafuchsin acetate) and aniline in urogenital gonorrhea in women. The solution is prepared with chemically pure basic fuchsin 1 Gm., pure aniline 2.5 Gm., glycerin 10 Gm. and enough distilled water to make 100 cc. The treatment consists in the use of two daily vaginal douches made up of 2 liters of boiled water containing a teaspoonful of the solution and, if possible, a short irrigation with part of this solution in the urethra when infected, and every other day an intra-urethral injection of 2 cc. of the solution and introduction of a strip of gauze, soaked in the solution, in the cervical canal, where it should be retained for a few hours. If Skene's and the periurethral glands are infected they should be treated with the solution. The treatment may also consist in the use of intravaginal ovules prepared with pure basic fuchsin 1 Gm., gelatin 10 Gm., distilled water 30 cc. and glycerin 60 Gm., the patient taking one each night for nine consecutive nights. If the body of the uterus is infected an intra-uterine injection of 1 cc. of the solution is given, except in cases of uterine retroflexion, in which it is contraindicated because of the possibility of complete absorption of the dye by the uterus. Basic fuchsin penetrates deeply the mucous membranes of the urogenital tract, as proved by histologic studies made by the author. It has a selective bactericidal action on the gonococcus. Its power of penetration into the mucous membranes of the urogenital tract is increased by the power of absorption of the membranes. Its bactericidal properties are increased by its association with aniline to such an extent that even a 1:20,000 solution inhibits the cultural development of the gonococcus in peptone bouillon or ascitic agar left for three days in the incubator.

### Medizinische Welt, Berlin

10: 473-508 (April 4) 1936. Partial Index

- Body Fluids in Their Relations to Central Nervous System and Its Functions. M. de Crinis.—p. 473.  
 \*Influence of Bile on Resorption of Vitamin C. W. Klodt.—p. 477.  
 Nonspecific Therapy of Infectious Diseases. H. Lotze.—p. 479.  
 \*Question of Male Climacteric and Its Treatment. W. von Noorden.—p. 484.

**Influence of Bile on Resorption of Vitamin C.**—According to Klodt, experimentation with cevitamic acid is difficult because of the extremely unstable character of its solutions. Cevitamic acid is readily absorbed in the organism, and it may be assumed that the human and animal organisms have substances that stabilize the cevitamic acid so that it reaches the small intestine unchanged. The resorption takes place chiefly in the upper part of the small intestine. The author made a study of the close relationship to bile that could be detected in investigations on the fate of cevitamic acid in the digestive tract. 1. He found that the bile of man, cattle and sheep considerably retards the oxidation of dilute solutions of cevitamic acid and thus facilitates their resorption in the small intestine.

2. Human and animal bile contain reducing substances that are not identical with cevitamic acid. 3. Bile does not reduce dehydrocevitamic acid. 4. The decomposition of the cevitamic acid in plant juices is likewise considerably retarded by bile.

**Question of Male Climacteric.**—Von Noorden emphasizes that there is no physiologic threshold beyond which in men, as in women, another physiologic phase begins and that there is no justification to speak of a male climacteric and place it in the years after 50. Such a term as male climacteric does not belong in the textbooks of physiology and pathology. To apply the term to psychic and physical defects that appear with greater frequency at the transition from the second to the third period of life may be permissible but is not advisable, since a physiologic significance may be applied to it. The author concedes that external circumstances may cause changes in a man, but they have no physiologic cause and a comparison with the life threshold which a woman has to pass at the time of the climacteric is inadmissible for physiologic and biologic reasons. The changes that develop in men in the corresponding age originate in all sorts of disturbances and in various conditions of the milieu and of civilized life and, as far as the latter are concerned, are practically unknown to primitive men. *Physical and psychic disorders are not restricted to a certain time but rather lead toward old age.* Regarding the treatment, the author says that sane attitudes and a natural mode of life are most important. Gonadal therapy is important, even if its action is perhaps only suggestive.

### Ugeskrift for Læger, Copenhagen

98: 211-232 (March 12) 1936

- Surgical Treatment of Peritonillar Abscess. R. Schroeder.—p. 211.  
 Lumbar Anesthesia with Tropicaine. T. Eiken.—p. 215.  
 Intracutaneous Reactions with Extract of House Dust and Similar Substances in Bronchial Asthma. H. C. Gram.—p. 219.  
 \*Remarks on Sedimentation Reaction in Coronary Thrombosis. S. Christensen.—p. 221.

**Sedimentation Reaction in Coronary Thrombosis.**—Christensen finds that the sedimentation reaction is of great diagnostic and prognostic value in coronary thrombosis and myocardial infarct. The sedimentation reaction always rises after some days of the disturbance; a normal sedimentation reaction in a patient with cardiac pain for some time or for a longer time thus makes the diagnosis of coronary thrombosis improbable. A sedimentation reaction constantly increasing to high values is an unfavorable prognostic sign, while a slow and gradual decrease is a favorable indication.

98: 261-286 (March 26) 1936

- \*Conservative Surgical Treatment of Kidney and Kidney Pelvis Together with Case of Heminephrectomy. H. Abrahamsen.—p. 261.  
 Saturation of Patients Having Scurvy with Cevitamic Acid. P. Schultzer.—p. 268.  
 Eczema Caused by Pantocain. H. Videbech.—p. 278.

**Surgical Treatment of Kidney Pelvis.**—Abrahamsen reviews twenty cases of hydronephrosis in which treatment was administered in the last three years and reports the five cases of plastic surgery of the pelvis and transplantation of the ureter. Ureteropyelostomy, he says, may be considered when exhaustion calls for rapid and lenient intervention. In his first case of plastic surgery nephrostomy was not done, in spite of infection of the pelvis before operation, and complications set in, necessitating nephrectomy; in the other four cases the post-operative course was uneventful. He advises conservative operation in relatively young patients in good condition, with no or slight infection, with perhaps bilateral renal disturbance and likewise, in case of simultaneous mechanical obstacle, to passage of the urine. If large aberrant vessels are seen on operation, compression of the vessels is recommended, to determine whether the blood supply to the pole of the kidney is compromised, in which event ureter transplantation is indicated. The author says that infections of the more banal kind tend to occur in a double kidney, usually in its lower portion, and describes a case of double kidney with pyuria and coluria in which cystoscopy and roentgen examination failed to reveal the cause, diagnosis being made after pyelography. Heminephrectomy with removal of the dilated ureter was followed by recovery; on examination, a year later, the patient was well. A case is also reported in which pyelotomy disclosed a membranous pyelitis and nephrotomy was done, with good results.

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## FACTORS OF RESISTANCE IN EXPERIMENTAL POLIOMYELITIS

WITH COMMENTS ON IMMUNITY IN POLIOMYELITIS

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The question of immunity in acute anterior poliomyelitis has remained a challenging problem in virus studies. Investigations conducted since the early work of Landsteiner and Popper and of Flexner and his associates have attempted to solve the difficult situation, but experimental medicine has not as yet placed in the hands of the clinician and public health official effective tools capable of preventing or specifically treating this condition. Attempts to devise methods of immunization have been too numerous to recount, but generally the procedures have not been sufficiently effective and safe in the experimental disease for proper application to man. The noncultivability of the infectious agent on lifeless mediums and the availability of only a single, expensive experimental animal have been practical deterrents, but the basic difficulties have been more recently appreciated; namely, the peculiar pathogenesis of the disease and specifically the tendency of the virus to follow neural pathways. Efforts to induce an immunity in man have been based on classic principles effective in other infectious states, and insufficient attention has been paid to the basic difficulties and to factors of the host's resistance to this particular virus.

For the past five years we have carried on an experimental study of the factors concerned in resistance to and pathogenesis of poliomyelitis in *Macaca mulatta* (*Macacus rhesus*). An analysis and correlation of the observations have led to an evaluation of certain elements that are concerned in immunity to experimental poliomyelitis. The value of such observations with respect to the human disease depends on whether the factors operative in the disease of monkeys may validly be applied to the condition in man. On the basis of these analytic studies and ancillary observations we have attempted to explain the observed facts in terms of immunity in poliomyelitis.

A reconstruction of our experimental procedures allows a logical consideration of possible factors of resistance under the following headings: the naso-

pharyngeal mucosa, the intestinal mucosa, the spleen as a large depot of reticulo-endothelial cells, the demonstrable antibodies in the blood serum, certain bodily physiologic factors, the relationship between the blood and the central nervous system, and the rôle of the olfactory tract. In such a survey the external barriers, certain anatomic and physiologic elements, and some essential relationships of the nervous system are considered.

### EXPERIMENTAL

*The Nasopharyngeal Mucosa.*—The epidemiology of poliomyelitis points to the nasopharynx as the common portal of entry of the virus. Experimental evidence for this was on hand as early as 1910, when Flexner and Lewis<sup>1</sup> showed that monkeys could be infected by applying the virus to this region. Later reports by various workers have emphasized the significance of the olfactory nerve endings in the nasal mucosa as the probable anatomic structures by which the virus enters the body. There appears, however, to be some resistance offered by the mucosal barrier in monkeys, since even relatively large and repeated doses of virus are not always effective in infecting animals. This is further borne out by the observation by Schultz and Gebhardt<sup>2</sup> that a preliminary flushing of the nasopharynx with acid phosphate solution reduces the resistance to virus administered intranasally.

This observation we have confirmed by noting that, without the previous washing with acid phosphate, we obtained poliomyelitis in sixteen of twenty-four monkeys, whereas all of nine monkeys succumbed to the disease after we adopted the technic of washing with the acid solution, and in fact with the use of less amounts of virus than previously. (These animals do not include those in which some other experimental factor was introduced.)

Clearly, the monkey's nasal mucosa offers a barrier of resistance to infection, possibly by the presence of mucus overlying the terminal hairs of the olfactory nerves. The action of the acid phosphate presumably is to digest the mucus and to flush the mucosa. The presence of an alterable barrier in this site is further indicated by the finding of Armstrong and Harrison<sup>3</sup> and of Sabin, Olitsky and Cox<sup>4</sup> that the effect of alum applied to monkeys' nasopharyngeal mucosa is to increase the resistance of the animal to virus given by this route.

1. Flexner, Simon, and Lewis, P. A.: Experimental Epidemic Poliomyelitis in Monkeys, *J. A. M. A.* 54:1140 (April 2) 1910.

2. Schultz, E. W., and Gebhardt, L. P.: Observations on the Intranasal Route of Infection in Experimental Poliomyelitis, *Proc. Soc. Exper. Biol. & Med.* 30:1010-1012 (May) 1933.

3. Armstrong, Charles, and Harrison, W. T.: Prevention of Intranasally Inoculated Poliomyelitis of Monkeys by Instillation of Alum into the Nostrils, *Pub. Health Rep.* 50:725-730 (May 31) 1935.

4. Sabin, A. B., Olitsky, P. K., and Cox, H. R.: Protective Action of Certain Chemicals Against Infection with Poliomyelitis Virus by the Nasal Route, *Proc. 37th Annual Meeting, Soc. Am. Bact., New York, Dec. 26-28, 1935, J. Bact.* 31:35-36 (Jan.) 1936.

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*The Intestinal Mucosa.*—The gastro-intestinal tract has been suspected on epidemiologic grounds of being the route of infection in man. Positive experimental results have been obtained only when some extreme measure was resorted to, and then not regularly. Lennette and Hudson<sup>5</sup> and Flexner<sup>6</sup> have recently reviewed the situation and reported their failures to elicit any experimental support for gastro-intestinal infection. We<sup>5</sup> attempted to infect monkeys by administering large amounts of virus to isolated intestinal loops, thus bringing the virus to mucosa presumably normal physiologically and devoid of the effect of dilution by intestinal contents. Our experiments were entirely negative, which may be explicable on the basis of lack of exposure of unmyelinated nerve fibers in the intestinal mucosa or for the reason that regions of intestine optimal for virus invasion were not used. From these experiments it appears that in the monkey the intestinal mucosa is a distinct barrier to infection.

*The Spleen.*—Much work has been done to show the rôle of the spleen in infectious processes. It is not our intention to review here the evidence bearing on the activity of the organ as a large accumulation of reticulo-endothelial cells. That this system is active in the disposal of infectious agents and is probably an important factor in immunity is now generally recognized.

Whether the spleen could be a factor of resistance in experimental poliomyelitis depends in large part on whether the virus circulates in the blood vascular system. This has seldom been demonstrated in the experimental animal and for that reason we did not at first attempt to gain information on the immunologic activity of the spleen following intranasal or intracerebral inoculation. Furthermore, either of these methods of inoculation is so effective that a large series of animals would be necessary to gain reliable data on the susceptibility effect of removing the spleen. On the other hand, intravenous inoculation of virus is effective only when large doses are administered, and by employing a sub-infective dose any lowered resistance obtained by splenectomy might be apparent. The present summary of experimentation by Lennette<sup>7</sup> is concerned chiefly with the effect of removal of the spleen before and after intravenous injection of virus.

When large amounts of virus were given intravenously to normal animal controls, half the monkeys (nine of eighteen) became infected, while the same proportion of monkeys (four of nine) died of poliomyelitis that were similarly injected after healed splenectomy. Of fourteen immunized and convalescent animals without spleens, none succumbed to the same treatment. When smaller doses of virus, however, were administered to six normal monkeys as controls, none showed any reaction, whereas two of five monkeys previously splenectomized had the specific infection. This was the only evidence that splenectomy played any part in lowering the resistance of the experimental animal to intravenously injected virus. A further examination of the rôle of the spleen was made by removing it from one to five days after inoculation of virus intravenously. None of six monkeys so treated became infected by doses of virus subinfective for normal (intact) animals.

The question of whether the spleen takes up the virus after intravenous inoculation was approached by test-

ing for virus in spleens removed one, three and five days after vascular injection of nonparalyzing doses. Twelve monkeys (six normal, three convalescent and three immunized), each group distributed as to time of splenectomy, were operated on. The virus was recovered from the spleens of only the two normal animals splenectomized twenty-four hours after virus injection.

This rapid disappearance of the virus in active form in the spleen was again demonstrated by its recovery from the spleen only one day (two monkeys) and not three and five days (two monkeys each time) after intrasplenic injection of potent virus. Is the virus, under these conditions, destroyed by phagocytosis or neutralized by antibodies?

An explanation was sought by examining the spleens of monkeys in an acute stage of poliomyelitis following cerebral inoculation of virus. The virus was not demonstrated in three spleens not perfused but was detected in extracts of perfused spleens of two other monkeys examined. Apparently, the spleen contained the virus, whether intravenously or cerebrally inoculated, and the virus was not recoverable later than twenty-four hours after vascular injection because of some other factor, possibly the neutralizing effect of antibodies. This hypothesis was tested by first examining splenic extracts of immune and normal monkeys for a neutralizing property; both of two spleens of the former neutralized virus, whereas neither of two of the latter had a neutralizing effect. This property associated with immune spleens was, however, apparently dependent on the contained blood of the spleen, since the neutralizing property was not demonstrable in the tissue of perfused spleens from three animals dying of poliomyelitis, three immune monkeys and three normal controls. We do not overlook, however, the possibility of there being too little tissue antibodies to be experimentally demonstrable.

It thus appears, under the conditions of these experiments, that there is some reason to consider the spleen as a factor of resistance in experimental poliomyelitis, even though minor. Splenectomy previous to intravenous virus seemed to lower the resistance to infection in a certain proportion of animals. The virus was taken up by the spleen in some way but rapidly disappeared as active virus, whether by its intracellular destruction or neutralization by antibodies. Perfusion of spleens removed the neutralizing property, which indicates its absence or small amount in splenic cells and makes uncertain the site of antibody formation in experimental poliomyelitis.

*Circulating Antibodies.*—The neutralizing antibody is the only form of immune body demonstrable in poliomyelitis. Its significance is debatable. Jungeblut and Engle<sup>8</sup> propose that it may be considered, under certain circumstances, as nonspecific. It has not regularly been demonstrated in the serum of persons convalescent from poliomyelitis; Kolmer and Rule<sup>9</sup> have recently summarized such observations. Furthermore, the neutralizing property is not always present in the serum of immune or convalescent monkeys. The experience of various workers in this regard has been brought together by Gordon.<sup>10</sup>

5. Lennette, E. H., and Hudson, N. P.: Failure to Infect Monkeys with Poliomyelitis Virus Through Isolated Intestinal Loops, *J. Infect. Dis.* 58: 10-14 (Jan.-Feb.) 1936.

6. Flexner, Simon: Respiratory versus Gastro-Intestinal Infection in Poliomyelitis, *J. Exper. Med.* 63: 209-226 (Feb.) 1936.

7. Lennette, E. H.: Studies on the Spleen in Experimental Poliomyelitis, to be published.

8. Jungeblut, C. W., and Engle, E. T.: Resistance to Poliomyelitis, *J. A. M. A.* 99: 2091-2096 (Dec. 17) 1932.

9. Kolmer, J. A., and Rule, Anna M.: Tests for Immunity to Acute Anterior Poliomyelitis: I. The Technic and Status of the Monkey Serum-Neutralization or Antiviral Test: *J. Immunol.* 29: 175-187 (Sept.) 1935.

10. Gordon, F. B.: Active and Passive Immunity in Experimental Poliomyelitis, to be published.



We (Hudson and Lennette<sup>11</sup>) have been unable to find any experimental evidence that alters our point of view that the neutralization test in man and monkey is a specific antigen-antibody reaction. We agree, however, that it may not always be demonstrable in the presence of an immunity that has been called tissue resistance.

On the other hand, experimental work by Gordon<sup>10</sup> leads us to propose that its presence in monkey serum is not evidence that an effective resistance to infection exists in that animal. Gordon has "vaccinated" twenty monkeys with various preparations and found twelve of nineteen of them (one test animal died of an intercurrent infection) to have a serum neutralizing property. When virus was instilled intranasally, however, eighteen of the twenty animals died of poliomyelitis, and a nineteenth succumbed following a subsequent intracerebral inoculation. One concedes that the test of resistance was experimentally severe, but the intranasal route may be adjudged more natural and less severe than the traumatizing cerebral method of inoculation. Evidently, the mere presence of a serum neutralizing property in the monkey cannot be considered as direct evidence of complete resistance to intranasal infection. The explanation probably lies in the pathogenesis of the disease, in that an extreme measure of immunization is necessary to protect the nerve cells against virus invasion. An immunization that leads solely to the production of antibodies may not be sufficiently intensive to confer an effective protection on the cells essentially parasitized.

*Physiologic Factors of Menstruation and Maturation.*—The immunity enjoyed by an individual to a certain infectious disease is entirely understandable when it follows recovery from a recognizable attack. Difficulties are met, however, in attempting to explain the resistance shown when no specific definable experience has been observed. Direct evidence is at hand in some cases, such as diphtheria, indicating that inapparent attacks account for much of one's resistance to specific disease. This may be the case in poliomyelitis; but, in the absence of a cultivable infectious agent, it is difficult to identify all the steps in the process of immunization. Aycok<sup>12</sup> uses the term "autarcesis" to explain the inapparent bases of resistance, and he correlates such a condition with the physiologic state as influenced by environmental factors. Jungeblut and Engle<sup>13</sup> propose that variations in the susceptibility to poliomyelitis can be traced to physiologic alterations attendant on such factors as maturation of the individual and changes in endocrine activity. They present experimental evidence to indicate that menstruation as an endocrine function and maturation as a physiologic development both lead to resistance to infection and to the presence of nonspecific neutralizing antibodies in the serum.

The hypothesis of the influence of menstruation has been tested by Hudson, Lennette and King,<sup>14</sup> who found that artificial menstruation induced in ten young monkeys by injections of anterior pituitary extracts failed

to lead to a development of neutralizing serum antibodies or to a demonstrable resistance in the nine animals injected with virus. Similarly, we<sup>11</sup> were unable to detect antibodies in thirty-one serum samples from fifteen adult males and six adult females (one specimen gave a positive test once and a negative test later). Criteria for the adulthood of these animals were as follows: The dentition of the animals was either early permanent (four monkeys) or completely permanent (seventeen monkeys); the testes were fully descended or menstruation had been observed over long periods; the heights were from 63 to 84 cm. and the weights were from 3.2 to 11 Kg. In these experiments we did not find evidence supporting the view that menstruation as such and sexual maturation are factors in the resistance to experimental poliomyelitis.

The problem of the conditions that influence resistance and susceptibility to infectious disease is of extreme importance and should be approached from as many angles as is experimentally possible. It is entirely conceivable that endocrine functions influence the outcome of exposure of the host to the parasite, but before such can be accepted in poliomyelitis, the experimental evidence should be consistent and continuous.

*The Blood-Central Nervous System Relationship.*—We have presented evidence bearing on the parts played in the defense to experimental poliomyelitis by the nasopharyngeal and intestinal mucosa, the spleen, humoral antibodies and certain physiologic factors. What of the central nervous system itself and its relation to the remainder of the experimental animal?

The attention is called to the nervous system in poliomyelitis by the essential pathologic condition therein and by the experimental work from 1912 to 1934 (reviewed by Lennette and Hudson<sup>15</sup>) that first incriminated the olfactory tracts and then proved the neural pathway of the virus from the nasal mucosa to the spinal cord. We<sup>15</sup> confirmed the observation of other workers that sectioning the olfactory tracts in the monkey prevented infection after intranasal instillation of virus. A further experience was recorded of being unable to infect the same five animals by massive intravenous doses, whereas four of five monkeys with intact olfactory tracts succumbed to the same intravenous dosages. This apparently essential rôle of the nerve pathways under these conditions was made more significant by our recovery of the virus from nasopharyngeal washings pooled from a group of three normal monkeys fatally infected with intravenous virus.

These experiments emphasize the selectivity of the virus for nervous tissue and suggest, without proving, a mode of infection after intravenous administration of virus. To circumscribe this relation between the virus and the nervous system, Lennette and Hudson<sup>16</sup> explored the possibility of the effectiveness of the blood-central nervous system barrier as a factor of resistance to vascular virus. A sublethal dosage of virus by this route was established and then, borrowing the technic of cerebral damage by sterile starch injections from the yellow fever work by Sawyer and Lloyd,<sup>17</sup> we were able to break the blood-central nervous system

11. Hudson, N. P., and Lennette, E. H.: The Specificity of Neutralizing Antibodies in Poliomyelitis, to be published.

12. Aycok, W. L.: A Study of the Significance of Geographic and Seasonal Variations in the Incidence of Poliomyelitis, *J. Prev. Med.* 3: 245-278 (May) 1929.

13. Jungeblut, C. W., and Engle, E. T.: An Investigation into the Significance of Hormonal Factors in Experimental Poliomyelitis, *J. Exper. Med.* 59: 43-61 (Jan.) 1934.

14. Hudson, N. P.; Lennette, E. H., and King, E. Q.: Failure to Neutralize the Poliomyelitis Virus with Sera of Adult Macacus Rhesus and of Young Female Rhesus Treated with Anterior Pituitary Extracts, *J. Exper. Med.* 59: 543-552 (May) 1934.

15. Lennette, E. H., and Hudson, N. P.: Relation of Olfactory Tracts to Intravenous Route of Infection in Experimental Poliomyelitis, *Proc. Soc. Exper. Biol. & Med.* 32: 1444-1446 (June) 1935.

16. Lennette, E. H., and Hudson, N. P.: The Blood-Central Nervous System Barrier in Experimental Poliomyelitis, to be published.

17. Sawyer, W. A., and Lloyd, Wray: The Use of Mice in Tests of Immunity Against Yellow Fever, *J. Exper. Med.* 54: 533-555 (Oct.) 1931.

barrier and obtain fatal infections with virus given intravenously. Three normal monkeys so treated died of poliomyelitis, while six controls without starch in the brain showed no reaction. Apparently, the cortical injection of sterile starch permitted the intravascular virus to enter the damaged nerve cells from the capillaries and the disease progressed therefrom. It is impossible to say whether the damage to the nerve cells or the break in the blood capillaries is the more important factor.

This principle of damage allowing the parasitization of nerve cells was disclosed further when, by the mere cutting of certain large peripheral nerve trunks, fatal infections were induced by immediate intravenous administration of amounts of virus previously found sublethal to normal animals. The femoral nerve was cut in three monkeys, the sciatic in two and the vagus in two; poliomyelitis developed in one monkey with a cut femoral nerve and in one in which the vagus was sectioned.

To summarize, it appears that the nervous system is the essential site for the pathogenesis of poliomyelitis virus invasion, that the olfactory tract is an important route of entry to the body, and that there is a distinct barrier between the vascular and nervous systems, which can be broken by mechanical means. Thus the distinctness of the central nervous system from the remainder of the body in the pathogenesis of experimental poliomyelitis becomes even more apparent.

#### COMMENT

A conception of the mechanism of immunity in poliomyelitis is based on the direct and indirect types of evidence furnished by the accumulated knowledge of the epidemiology, pathology and pathogenesis of poliomyelitis, and the nature of the virus and the experimental disease. It would be tiresome to the reader, if not well-nigh impossible, to make satisfactory and just reference to all the work that has added with a steady crescendo to our acquaintance with this condition. The availability of the monkey as an experimental animal has allowed a finer perception of the factors in immunity not only through the analysis of factors of resistance in the experimental condition but also in the study of the disease as it exists in the natural host.

We conceive of acute anterior poliomyelitis as being transmitted from person to person most commonly by droplet infection. It is not sufficient to rely on acute cases as sources of virus, and the rôle of carriers and missed cases is indicated not only by the evidence of epidemiologists but also by the work of experimentalists (Kramer<sup>18</sup> and others). Once the virus has reached the individual, it may lodge in the nasopharynx or tonsils or enter by the gastro-intestinal route. We believe that the latter route is not likely, although we recognize the weight of certain epidemiologic evidence. Whether the virus increases in its mucosal nidus in the upper respiratory region is not known. Multiplication in this site would result in its maintenance in the population by offsetting the effect of dilution by transfer. Increase in the enclosed central nervous system in acute and subacute cases does not wholly account for the prevalence and distribution of the virus in man,

unless a recontamination of the nasal mucosa by exuded virus is hypothecated in such individuals. We<sup>19</sup> have reported finding the virus in this region after intravenous injection of large amounts of virus, amounts probably not present in the vascular system in the natural infection. Burnet,<sup>19</sup> on the basis of experiments with the louping-ill virus in rats, proposes that that virus may be discharged onto the mucosa from the parasitized olfactory cells. Elucidation of the problem of nasopharyngeal residence of the poliomyelitis virus awaits further experimentation.

The next step in the immunologic process is the absorption of the virus from the mucosal surface. Evidence that others and we have presented points clearly to the exposed nerve endings of unmyelinated nerve fibers as the route of entry of the virus into the body. The first cranial nerve represents such a portal, the parasitization of which leads to the virus invasion of the central nervous system. The factors that determine the absolute or relative degree of invasion begin with the condition of the upper respiratory tract, as detailed under the consideration of the mucosal barrier, and perhaps as obtains in the pathologic state (e. g., tonsillectomy).

Once the virus has entered nervous tissue, its migration seems to continue along axonal pathways, passing from the olfactory tract through the hypothalamus, thalamus and medulla to the cord. The evidence for this sequence was reviewed by Faber.<sup>20</sup> The significant point is that the virus has been traced in nerve cells. While such information is taken from studies on acute infections, there is no reason to doubt its occurrence in subacute and nonclinical experience with the virus. A question concerning immunity is whether the virus remains restricted to the cells of the nervous tissue. If it does, a tissue resistance, of a type not now understood, may account for the relative insusceptibility had by those who have experienced an exposure of their nervous tissue to virus; if it is not restricted, and this we are inclined to accept, the more extensive effects of immunity may become manifest, with antibodies appearing in the blood serum in addition to tissue resistance. The factors that control the outcome of a primary exposure to virus are not definable but probably include those vague forces that are operative in determining the parasite-host balance in infections in general. One significant factor may well be the amount of virus that an individual acquires or possibly cultivates on his mucosa. Once it has penetrated the nerve cells, however, the undefined forces referred to seem to exert an influence. Considering the epidemiology of poliomyelitis, the duration of immunity may depend on the result of the original exposure or on the repetition of exposure.

As discussed in the general experimental section, neutralizing antibodies in the serum of man and monkeys seem to be specific in nature. If this is true, evidence must be looked for that the virus leaves the nerve cells and acts as an antigen, stimulating the antibody-producing cells of the body. Experimental evidence confirms this not only in the occasional finding of virus in the blood stream during experimental infection but also in our demonstrating the virus in the spleens of monkeys cerebrally inoculated. These obser-

18. Kramer, S. D.: Immunity to Poliomyelitis in the General Population: Probable Mechanism of Production, *J. A. M. A.* **99**: 1048-1050 (Sept. 24) 1932; Detection of a Healthy Carrier of Virus of Poliomyelitis Without History of Contact, *Proc. Soc. Exper. Biol. & Med.* **32**: 1165-1172 (April) 1935.

19. Burnet, F. M.: Inapparent Infection of the Rat with Louping-ill Virus, *J. Path. & Bact.* **42**: 213-225 (Jan.) 1936.

20. Faber, H. K.: Acute Poliomyelitis as a Primary Disease of the Central Nervous System, *Medicine* **12**: 83-186 (May) 1933.

vations indicate the probable mode of antigenic sensitization of extraneural tissue and would account for the presence of serum antibodies.

The conception that the body is immunized by virus that migrates perhaps variably from its intraneural site allows for the irregularity of antibody content in the serum. Furthermore, an explanation for the observation that sometimes the virucidal content of serum of persons without an acute attack is higher than of those convalescent from this disease may lie in the possibility that the former are more effective in their antibody response while the latter are less efficient in this regard, are more susceptible and on recovery have responded with a lower serum antibody content.<sup>21</sup> To postulate this, however, one must consider that the serum property is an indication of neural overflow of virus and hence is but a mark of exposure of body tissue to the antigen. Its occasional absence in the blood of human convalescents and its very infrequent lack, as observed by us, in the serum of monkeys convalescent from acute attacks support the idea of tissue resistance without extraneural migration of the virus.

We have been unable in our experiments to determine the site of antibody formation. Some experimental evidence we have offered tends to show that, once the virus has left the axonal pathways, the spleen may play a rôle in resistance. Because of the difficulties in this type of experimentation with the poliomyelitis virus, however, too much emphasis should not be placed on this evidence. Nevertheless, because of the interpretive significance of antibodies, we propose that cells and parts outside the central nervous system contribute to manifestations of immunity in poliomyelitis. This gains support in the claims of clinicians that patients react as to a generalized infection, and of pathologists who have described changes in the lymphoid system in fatal cases.<sup>22</sup>

The possibility arises that antibodies result from a vascular distribution of the virus from the upper respiratory tract. This is conceivable and is not incompatible with the neural migration of virus, since we have shown how virus intravenously injected was recovered from the nasopharynx of monkeys and did not cause disease in animals so injected whose olfactory tracts were sectioned. If the virus primarily becomes intravascular, it appears that the migration by the olfactory tracts is the probable secondary route, in view of our experiments on the barrier between the vascular and central nervous systems. The primary vascular invasion would explain much in immunity and would be acceptable if it were not for the necessity of granting the neural route from the nasopharynx, in which case the direct migration by this pathway may better be considered in the natural droplet infection of poliomyelitis.

Much experimental work has been done on the problem of artificial immunization. Gordon<sup>10</sup> dealt with this by injections of virus adsorbed to alumina-gel and of virus purified by adsorption to and elution from the same gel. His experience was that, in the attempt to immunize, fatal infections occasionally occurred and that, even under these extreme circumstances, neutralizing antibodies were not always produced and almost

all monkeys surviving "vaccination" were still susceptible to virus administered intranasally. As others have found,<sup>23</sup> amounts of potent virus too near the lethal limit were necessary for the production of immune bodies in the serum. The failure to build up a resistance to the virus in nerve cells finds its explanation in the distinctiveness of the nervous system from the remainder of the body so far as the pathogenesis of the disease is concerned.

Schultz and Gebhardt<sup>24</sup> have expressed a similar point of view, especially in connection with the apparent inability of injected immune serum to reach and block the virus in its intracellular location in the nervous system. Correspondingly, artificial active immunization may be inadequate in furnishing protection by extraneural stimulation of antibodies. Abundant evidence is at hand, however, that proves "vaccination" possible, and we have accomplished it by intravenous injection of relatively large amounts of virus. The necessity of extreme measures for the production of an effective active immunity may be due to a barrier surrounding the central nervous system, similar to the blood-central nervous system barrier to intravenous virus. The penetration of this barrier by antibodies for the protection of the central nervous cells may be possible only when near-lethal amounts of active virus are used. The question naturally arises, therefore, as to the desirability of attempting active immunization of man under these circumstances, and further, whether serum antibodies induced by injection of virus are necessarily an indication of protection of the nerve cells to virus invasion.

As has been so often expressed by students of poliomyelitis, measures designed to produce both active and passive immunity must take into account the properties of the virus and the peculiar pathogenesis of the disease, and be directed toward the immunization of the cells of the central nervous system.

#### SUMMARY

Elements concerned in the resistance of the experimental animal *Macaca mulatta* to acute anterior poliomyelitis were investigated.

1. A certain degree of resistance was demonstrated in the nasopharyngeal mucosa, although ample evidence was found that pointed to the upper respiratory tract as the portal of entry of the virus. The intestinal mucosa was an effective barrier to infection by virus administered in isolated intestinal loops.

2. The rôle of the spleen as an organ involved in resistance was studied by the effect of its removal before and after the intravenous injection of virus. Splenectomy seemed to reduce the resistance in two of eleven monkeys and then only when the operation was done before virus injections. In other experiments, virus was found in the spleen in the first twenty-four hours after intravenous or intrasplenic injection. Its disposal in the spleen seemed to depend in part on the contained blood antibodies, since the virus was recovered from spleens of monkeys dying of poliomyelitis only when the organs were perfused. The site of antibody formation was not defined.

23. Olitsky, P. K., and Cox, H. R.: Experiments on Active Immunization Against Experimental Poliomyelitis, *J. Exper. Med.* **63**: 109-125 (Jan.) 1936.

24. Schultz, E. W., and Gebhardt, L. P.: Observations on the Therapeutic Value of Specific Immune Serum in Experimental Poliomyelitis, *J. Pediat.* **6**: 615 (May) 1935; Observations on the Prophylactic Value of Specific Immune Serum in Experimental Poliomyelitis, *ibid.* **7**: 332 (Sept.) 1935; On the Problem of Immunization Against Poliomyelitis, *California & West. Med.* **43**: 111 (Aug.) 1935.

21. Brodie, Maurice: The Antibody Content of Acute Poliomyelitis Cases as Compared with Normal Individuals, *Proc. 37th Annual Meeting, Soc. Am. Bact.*, New York, Dec. 26-28, 1935, *J. Bact.* **31**: 36 (Jan.) 1936.

22. Poliomyelitis, International Committee for the Study of Infantile Paralysis, Baltimore, Williams & Wilkins Company, 1932, p. 169, 359.

3. Neutralizing antibodies were formed in monkeys "vaccinated" with certain preparations, but their presence was not an indication of effective protection of the animals to intranasal virus.

4. Natural or artificially induced menstruation and physiologic maturation of monkeys did not lead to the formation of a demonstrable virucidal property of the blood.

5. Sectioning of the olfactory tracts prevented infection not only after intranasal virus but also after injections of virus intravenously. The selectivity of the virus for this pathway to the nervous system was further indicated by the recovery of virus from the nasopharynx of other monkeys infected by the blood stream.

6. An explanation was found for the relative resistance imposed as a barrier to the virus between the vascular and central nervous systems. Sublethal doses were made fatally infective by damage to the cerebral cortex by starch injections, and to certain large peripheral nerve trunks by section.

These experiments may be interpreted as meaning that the poliomyelitic infection is primarily and largely of the central nervous system.

A theory of immunity in poliomyelitis logically develops from an analysis of pathogenesis and factors of resistance. We conceive of the virus of this disease as entering the body by the olfactory tract, migrating intracellularly through the central nervous system to the loci of predilection in the cord, and sensitizing the nervous tissue in some way so that it is resistant to reexposure to the virus. The virus apparently escapes from the nervous tissue and irregularly invades the body, exciting the defense mechanisms of the body with the stimulation of antibody formation. The neutralizing antibody in the natural condition is thus an indication of specific sensitization by extraneural stimulation after nerve cell migration of the virus. Antibodies induced by the artificial conditions so far devised are not necessarily a measure of nerve tissue resistance.

Artificial immunization of man, either active or passive, should take into account the distinctness of the central nervous system in the pathogenesis of poliomyelitis and the significance of certain factors of resistance. The interpretation of demonstrable antibodies should be made in the light of these observations, and measures of immunization may well be directed toward the neural features of the disease.

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**Clever People and Quacks.**—I have noticed that clever people are usually fools about their own health. The nice clever people, those who have great gifts and an accompanying simplicity of soul, fall into the hands of charlatans and dishonest healers because, knowing nothing of objective pathology, they will accept any statement or treatment which the quack likes to suggest. . . . The difficult and rather worthless type is the successful, usually rich, person, who having differentiated himself from the common herd by the amassing of money, or the purchase of a title, must needs be individual in his therapeutic adventures. The common basis for the absolute and stupid faith which such a man exercises in respect to some new treatment is conceit, for he cannot bear to be as other men are and must always know better than the ordinary mortal. Examples of this stupidity, of this Athenian demand for some new thing, are so numerous that I will not attempt to chronicle them, but every practitioner probably hears of a case of this sort about once a month.—Howard, Christopher: *The Art of Medicine, Lancet* 1:754 (March 28) 1936.

## LOW BASAL METABOLIC RATE AND THE USE OF DESICCATED THYROID

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While certain facts relative to the occurrence of low metabolic rates have been definitely established, there are other factors concerning which there is little conclusive knowledge. Although a low rate of metabolism is common to all the conditions under consideration in this paper, it is quite apparent that the causes of this low rate are different.

The basal metabolic rate is maintained in the organism in part by thyroxine, which acts in the tissues as a catalyst and, to some extent, regulates the rate of energy transformation. It is a known fact that in normal individuals approximately 40 per cent of the heat production, as measured by the consumption of oxygen, is controlled by the thyroid gland. When the thyroid gland is destroyed and the organism has had sufficient time to become free from thyroxine, the basal metabolic rate drops to from —40 to —45 per cent.

When in association with a known depletion in the body's supply of thyroxine the basal metabolic rate has dropped to —18 or —20 per cent, certain physical disturbances associated with the disease myxedema become apparent. The basal metabolic rate may, however, fall to much lower levels than this without the appearance of the characteristic physical changes of myxedema and without any apparent disturbance of the thyroid gland. Thus the question arises as to whether depression of the basal metabolic rate must of necessity be dependent on a deficiency of thyroxine. Although at present no positive answer can be given to this question, the evidence suggests that the thyroid gland is not involved, at least primarily, in all conditions associated with basal metabolic rates lower than the standard average normal.

That the thyroid gland plays only a small part, if any, in the production of a low basal metabolic rate in conditions other than myxedema is suggested by the fact that, in the treatment of myxedematous patients with desiccated thyroid, very obvious conditions both physical and otherwise are completely eradicated by such treatment, whereas, in the treatment of nonmyxedematous patients with low metabolic rates, desiccated thyroid is often required in much larger doses to maintain a normal basal metabolic rate, but it does not bring about any apparent physical change.

Any classification of conditions associated with a low metabolic rate must, then, take these facts into consideration, and a workable classification must ignore many highly important but unknown factors. A classification which satisfactorily separates conditions associated with a low rate of metabolism is given in the accompanying tabulation.

### MYXEDEMA

Myxedema is caused by either partial or complete destruction of the thyroid gland by extirpation, disease or a combination of the two. It may occur spontaneously as a result of a degenerative process, the cause of which, when known, usually is thyroiditis. It may also occur following thyroidectomy in cases in which the gland was previously affected by a degenerative process; in such cases the thyroid tissue remaining, although

under ordinary conditions adequate in size, does not produce sufficient thyroid secretion to prevent myxedema.

In true hypothyroidism it is known that, when the basal metabolic rate falls below —20 per cent, characteristic nonpitting edema is going to be present to some extent. Usually, if the disease is kept in mind, the characteristic appearance of swelling about the eyes and face, dryness of the skin and hair, and both mental and physical slowness lead to a correct diagnosis. These symptoms, together with the deliberate and thick speech, aching and stiffness of the joints, marked intolerance to cold, and the peculiar pallor so characteristic of the disease, usually direct one's attention to the diagnosis if one is familiar with the condition. Not infrequently hoarseness is the disturbing symptom that causes the patient to consult his physician.

The characteristic tendon reflex of myxedema which is so pathognomonic of the disease is one in which the contraction component is normal but the relaxation component is markedly slower than normal, at times being so slow as to appear to be absent. This sign is always best seen in the achilles tendon reflex; however, not infrequently it is present in all reflexes of the extremity.

In the usual textbook picture of myxedema, a marked gain in weight is given as the rule. However, many patients have not experienced a gain in weight and many patients with myxedema are thin. It is true, of course, that patients who are naturally somewhat obese have great difficulty in reducing their weight even on a near starvation diet. This fact is easily accounted for by the low rate of metabolism and the inactivity accompanying myxedema.

Myxedema is frequently accompanied by secondary anemia. This, associated with the macrocytosis, high color index and achlorhydria, frequently leads to a diagnosis of pernicious anemia, the characteristic clinical picture of myxedema having been disregarded. An increase in the anemia occurs shortly after beginning treatment with desiccated thyroid. This increase is relative rather than actual because, shortly after treatment has been started, the edema begins to disappear and the plasma volume becomes increased without effecting a change in the cellular content. Frequently the greater part of the edema disappears after the first few days of treatment when 3 or 4 grains (0.2 or 0.24 Gm.) of desiccated thyroid is used as the initial dose. During this stage of treatment it should be remembered that there is a tendency toward an increase in urea in the blood.

There are other interesting and unexplained features of the disease, some of which may be confusing. There is an increase in size of the heart shadow in the six-foot roentgenogram. This increase in size may not at first be apparent, because the heart may not be considered abnormally large for the patient's age. But often, when a roentgenogram taken before treatment was begun is compared with one taken after treatment has been given, enlargement of the heart is evident.

Three principal electrocardiographic changes are seen in cases of myxedema and these changes disappear after treatment. The change most frequently seen is flattening or inversion of the T waves. The second change, which occurs much less frequently, is prolongation of the PR interval, which persists after administration of atropine. The third change is rare and consists of definite prolongation of the QRS complex.

Menorrhagia is not an infrequent occurrence in cases of myxedema, and in the absence of primary pathologic conditions in the uterus it responds satisfactorily to treatment of myxedema.

The values for cholesterol in the blood are almost invariably definitely elevated. The significance of this has as yet not been satisfactorily explained.

During the treatment of myxedema and prior to the time that the basal metabolic rate approaches normal, much larger amounts of desiccated thyroid may be necessary to elevate the metabolic rate and to maintain it at an elevated level than later on. At times, after a normal basal metabolic level has been reached, it is surprising what a small amount of desiccated thyroid is necessary to maintain that level. This is probably best explained by a change in the absorption of desiccated thyroid. It would appear that, during the stages in the treatment in which the metabolic rate is so low, the desiccated thyroid administered is not so completely absorbed as it is when the metabolic rate has reached a normal level.

There is no disease known that it more satisfactory to treat than myxedema.

#### LOW BASAL METABOLIC RATE WITHOUT MYXEDEMA

Since 1917, H. S. Plummer has recognized a group of cases in which the basal metabolic rate is below the average normal level but in which edema and some of the other characteristics of myxedema do not develop. This group comprises a much larger number of cases than any of the others mentioned. The characteristics of myxedema do not develop in these cases although the basal metabolic rate may fall much lower than —20 per cent, and deafness, slowness of recovery of the peripheral reflexes, hoarseness, slowness of mental and physical reactions, slowness of speech, and electrocardiographic changes do not occur except in the presence of coincidental disease.

Patients have the sallow complexion so characteristic of a low metabolic rate. The skin is usually dry, but there is much less tendency to scaling than in cases of myxedema. Fatigue is probably the most common and frequently the most prominent symptom. Gastric acidity is frequently low and achlorhydria is common. The values for cholesterol in the blood, although frequently higher than normal, are not as a rule as high as in cases of myxedema. The majority of these patients are asthenic and their complaints are of a functional nature, resembling those of neurasthenic patients. The symptoms and complaints coincide closely with those of the usual exhaustion syndrome. There seems to be a familial tendency in these cases to a lower than normal basal metabolic rate. In all probability the low basal metabolic rate has been present long before the patient is seen, or it had always been present. Therefore, the evidence is not sufficient to state that in this group of cases the lowered rate of metabolism is directly responsible, even in part, for the illness of which the patient complains.

In this group of cases there are subgroups in which certain symptoms are so predominant as to make them principal complaints. The symptoms otherwise correspond in general to those of asthenia.

*Menstrual Disturbances.*—Because of the comparative infrequency with which menstrual disturbances are associated with a low basal metabolic rate, and because of the occurrence of menstrual disturbances in the absence of the latter, one is not warranted in consider-

ing a low basal metabolic rate as necessarily being an abnormality. It is probably in such cases an individual characteristic.

The disturbances of menstrual flow associated with a low metabolic rate are amenorrhea, oligomenorrhea, and menorrhagia. Mussey and Haines<sup>1</sup> gave a group of patients who had amenorrhea, oligomenorrhea, or menorrhagia and a low basal metabolic rate carefully regulated doses of desiccated thyroid by mouth. In order to determine the effectiveness of giving desiccated thyroid alone in such cases, no other form of treatment was used. Haines and Mussey found that definite improvement was obtained in 72 per cent of the cases in which patients had amenorrhea, in 55 per cent of those in which patients had oligomenorrhea, and in 73 per cent of those in which patients had menorrhagia. They also found that aside from whether or not there was improvement in menstrual function, about 75 per cent of the entire group of patients reported improvement in their general health after elevation of their basal metabolic rates to within average normal limits.

#### Conditions Associated with a Low Metabolic Rate

1. Myxedema: A definite clinical entity associated with positive physical signs, including nontapping edema, and a basal metabolic rate of —20 per cent or lower.
2. Low basal metabolic rate without myxedema: A large group of cases that includes several subgroups. These may be classified in accordance with various physiologic disturbances which are not of necessity associated with any physical characteristics. The low basal metabolic rate may be a familial characteristic and it is often associated with asthenia. A low basal metabolic rate without myxedema may be associated with:
  - (a) Menstrual disturbances.
  - (b) Sterility.
  - (c) Hypersecretory rhinitis.
3. Anorexia nervosa: Loosely associated with a combination of psychical and physical signs. It may or may not be associated with a low basal metabolic rate. It was previously within normal limits.
4. Hypopituitarism: A definite clinical entity, associated with characteristic physical signs, but without edema, regardless of the basal metabolic rate.

**Sterility.**—Cases are sometimes encountered in which, although intolerance to cold and fatigability have been bothersome symptoms, sterility has occasioned the examination of the patient. In certain of these cases, conception has occurred following the finding of a low basal metabolic rate and its elevation by the use of desiccated thyroid.

**Hypersecretory Rhinitis.**—This third subgroup comprises cases in which patients complain chiefly of obstruction of the nasal passages. In these cases the mucous membrane of the nasal passages appears edematous, as in vasomotor rhinitis; however, the wet appearance noted in cases of vasomotor rhinitis is not present. Hypersecretory rhinitis is occasionally recognized as being associated with a low basal metabolic rate. At times there is satisfactory local response to elevation of the basal metabolic rate by administration of desiccated thyroid.

#### ANOREXIA NERVOSA

Anorexia nervosa is a term applied to a group of symptoms resulting from psychic disturbance and from starvation, the characteristics of the clinical picture being so constant as to warrant its acceptance as a definite clinical entity. The sequence of events appears to be as follows: A psychic disturbance develops which

is directly responsible for, and is followed by, loss of appetite. The resulting lessened intake of food finally leads to inanition, which in turn brings about a low rate of metabolism. This decrease in the metabolic rate has a tendency to depress the appetite still further because less nourishment is required to maintain body weight when the metabolic rate is low than when normal or high. In this manner a vicious circle is set up. Most of the loss of weight occurs early in the course of the disease, and at a certain point the weight becomes more or less stationary. It appears that depression of the basal metabolic rate in such cases acts somewhat as a protective mechanism, for, if the metabolic rate should remain normal, death would undoubtedly occur rapidly. The fact that the favorable results which have been observed have occurred after considerable time, though the metabolic rate and intake of food had maintained near normal, suggests that other secondary degenerative processes have taken place as a result of inanition.

In cases of low basal metabolic rate caused by hypothyroidism, the clinical features of the condition appear following depression of the metabolic rate. In anorexia nervosa it seems that the opposite occurs; that is, the low basal metabolic rate follows, rather than precedes, the appearance of clinical evidence of the condition. Although patients with anorexia nervosa are to some degree intolerant to cold and may have dry and dry skin, they do not have the facial edema characteristic of myxedema. Many of them, however, have metabolic rates lower than those frequently found in cases of marked myxedema. In cases of true hypothyroidism in which the basal metabolic rate is less than —20 per cent, facial edema is present; this has not been true in any of the cases of anorexia nervosa seen at the clinic. Consequently, in these cases the lowered metabolic rate has not been considered to be attributable to primary hypothyroidism.

Between the years 1917 and 1930 a diagnosis of anorexia nervosa was made at the clinic in 117 cases which would indicate that the condition is not so common as one might expect. Although the condition is not limited to younger individuals, a majority of the patients were between the ages of 18 and 35 years. Eighty-nine of the 117 patients were females, and it is interesting to note that 53 per cent of these females had amenorrhea. Menorrhagia did not occur. The basal metabolic rates of the majority of the patients ranged from —20 to —42 per cent.

As to the appearance of these patients, two striking characteristics attract one's attention at first glance: extreme emaciation and the rather marked pallor. The pallor is attributable to the low basal metabolic rate and not to the anemia, as is shown by the fact that in the entire group of 117 patients, none had an erythrocyte count of less than 4,000,000 per cubic millimeter. The patients appear preoccupied, but when questioned they respond quickly. Their general attitude seems to be one of apathy.

The two principal complaints are (1) loss of appetite and of weight and strength, and (2) various gastrointestinal disturbances, which do not correspond to the conditions found in any of the well known gastrointestinal diseases. These gastro-intestinal symptoms which consist mostly of gas, distress, fulness and pain, are exaggerated immediately after meals and occur in the epigastrium.

Benedict and others have shown by observation of professional fasters that even in the less severe degrees

1. Mussey, R. D., and Haines, S. F.: Amenorrhea and Oligomenorrhea Associated with Low Basal Metabolic Rates, *Am. J. Obst. & Gynec.* 27: 404-407 (March) 1934.



of undernutrition in healthy individuals depression of the basal metabolic rate occurs.' This was accompanied also by a fall in the systolic blood pressure.

While the treatment in some cases of anorexia nervosa is very satisfactory, this is far from being the rule, and there are several factors such as insufficient funds and inability to cooperate which may make the problem of treatment difficult. Response to treatment occasionally is so satisfactory, however, that one feels warranted in attempting it in all cases, even though the patient's refusal to cooperate may appear to make such treatment worthless from the start. Reestablishment of a normal intake of calories is the direct goal, and to this end treatment with a preparation of thyroid gland has been proved to be a valuable adjunctive measure.

#### HYPOPITUITARISM

Pituitary insufficiency is very frequently associated with a subnormal basal metabolic rate. The chromophobe type of tumor of the anterior lobe of the pituitary gland is by far the most frequent cause of hypopituitarism. Cushing and Davidoff<sup>2</sup> reviewed 107 cases of histologically verified chromophobe adenoma of the pituitary gland and found the average basal metabolic rate to be -14 per cent. The rate was below -20 per cent in twenty-one of these 107 cases.

Patients suffering from hypopituitarism have a characteristic pallor, but it differs from that of myxedema in that it is waxy, the skin appearing as though it were thin and almost transparent. The skin rarely has a tendency to scale; also the facial edema which is constantly present in myxedema is lacking. The secondary anemia that is so often seen in association with myxedema is not present in cases of hypopituitarism.

Myxedematous patients frequently have alopecia, and at times there may be considerable loss of hair of the scalp. This is not the case in hypopituitarism. The cutaneous hair, especially of the face and pubis, is frequently absent in hypopituitarism, which is not the case in myxedema. This lack of facial hair and the characteristic pallor are frequently diagnostic when the patient is a man. In hypopituitarism, with the exception of the extremely rare case of Simmons' cachexia, there is usually some tendency to obesity. In the male such obesity tends to have the feminine characteristics such as are seen in the presence of a marked Fröhlich syndrome.

The symptoms of hypopituitarism may be purely general and of no diagnostic value; however, during routine general physical examination homonymous hemianopia may be roughly elicited. In such cases further and more conclusive evidence is obtained from examination of the perimetric fields and from roentgenologic examination of the sella turcica.

Simmons' cachexia, although rare, may present considerable difficulty in distinguishing it from anorexia nervosa; however, some of the differential features just mentioned may aid in diagnosis.

Usually, the general appearance of both myxedema and hypopituitarism suffice to make the differential diagnosis. Naturally, hypopituitarism does not involve the use of desiccated thyroid in treatment.

#### THE USE OF DESICCATED THYROID

There are two distinct indications for the use of desiccated thyroid in which its value has been definitely shown: (1) as a specific in the treatment of myxedema and (2) as a method of elevating a low basal metabolic

rate to normal in the absence of myxedema for the purpose of improving the general condition of the patient. Desiccated thyroid has been used extensively, regardless of patients' basal metabolic rates, both as a means of reducing weight and as an adjunct in connection with a weight reduction diet. It has also in some instances been used both preoperatively and postoperatively with the intention of speeding up the rate of the blood stream and so preventing postoperative venous thrombosis and pulmonary infarction. The limits of this paper, however, do not permit discussion of these two uses of desiccated thyroid.

In general it would appear that, either through lack of familiarity with the use of desiccated thyroid or with the conditions under which its use is indicated, the full effect of this substance has in many instances not been obtained. Patients are seen to whom desiccated thyroid has been given for short periods because of various conditions for which, from both a theoretical and practical standpoint, its use is not indicated. Equally often the estimation of a single basal metabolic rate has been the only criterion for the use of desiccated thyroid. In the absence of myxedema or of the symptoms of a low metabolic rate without myxedema, such as fatigue, intolerance to cold, and menstrual disturbances as described before, the use of desiccated thyroid is not indicated, even though the basal metabolic rate has repeatedly been found to be below the normal average for an apparently healthy individual. It should be remembered that in some instances a basal metabolic rate below the normal average is in all probability an individual characteristic.

Occasionally, desiccated thyroid is given without previous metabolic determinations, the pulse rate being followed frequently and this being considered to be indicative as to whether the dose should be increased or decreased. This method, in which the dose is of course entirely empirical, is not advisable and leads to unfavorable results.

There is apparently some misunderstanding also as to the time it takes for desiccated thyroid to produce an effect, as many patients have been told not to take it at night as it might cause insomnia. The action of desiccated thyroid is slow, and therefore to some extent cumulative; also, following the ingestion of desiccated thyroid a considerable period elapses before the effect of the drug has entirely disappeared. For clinical purposes one should wait a month before attempting to determine an individual's basal metabolic rate following the use of desiccated thyroid. It has been shown that, following cessation of the administration of thyroxine to myxedematous patients, the daily loss of thyroxine is approximately 6.5 per cent of the quantity then present. A curve showing this reveals a rapid loss of thyroxine at first, the loss becoming increasingly slower as time goes on. The most rapid disappearance of thyroxine occurs during the first two weeks, the rate of disappearance from then on becoming slower. At the end of a month, as stated before, the effect of either thyroxine or desiccated thyroid has for all practical purposes disappeared.

As a general rule one does not expect favorable results from elevation of the metabolic rate unless that rate is in the region of -16 per cent or lower and when such a rate is associated with definite symptoms, the most significant of which are fatigue and intolerance to cold.

As a routine, in the absence of nephritis and cardiovascular disease, an initial dose of 12 grains (0.8 Gm.) over a period of three or four days may be used, the

<sup>2</sup> Cushing, Harvey, and Davidoff, L. M. Studies in Acromegaly: IV. The Basal Metabolism, Arch. Int. Med 39: 673-697 (May) 1927.

dose being the same each day. At the end of that time a metabolic determination is made. Assuming that the original metabolic rate was in the region of  $-20$  per cent, the rate of the majority of individuals will be elevated to a point between zero and  $-10$  per cent. A dose of either  $1\frac{1}{2}$  or 2 grains (0.1 or 0.13 Gm.) of desiccated thyroid is then given, and at the end of another four or five days the metabolic rate is again determined. Depending on the value of metabolic determinations at intervals of every four or five days, an individual dosage will be determined which will maintain the basal metabolic rate at from  $-3$  to  $-5$  per cent. It has been found that the general feeling of these patients is better when the metabolic rate is maintained at a level slightly below zero than above it. To maintain this level, in the majority of cases 1,  $1\frac{1}{2}$  or 2 grains of desiccated thyroid is required daily. In other cases, however, the dose needed may be more or less dependent on trial; in some instances it may be found that 1 grain daily, for either five or six days out of each week, will be required.

When the original metabolic rate was considerably lower than  $-20$  per cent, it may be found that after an interval of a few days following the initial dose of 12 grains a second course of 12 grains over a period of three or four days may be required to bring the metabolic rate above  $-10$  per cent. At times, especially in the presence of severe associated conditions such as chronic nephritis, coronary sclerosis and severe hypertension, extreme caution should be used in administering desiccated thyroid, small doses such as 1 or  $1\frac{1}{2}$  grains being used from the beginning of the treatment.

In determining the maintenance dosage, it must be remembered that each patient presents an individual problem. To be sure that the dosage is correct, further metabolic determinations should be made at the end of a period of two months.

As a rule the time consumed in elevating the metabolic rate and in determining the individual dosage of desiccated thyroid is from three to four weeks. It is very important, especially in the treatment of myxedema, to remember that during elevation of the metabolic rate there may be retention of urea. This, of course, indicates the use of smaller doses of thyroid extract; also in the treatment of myxedema it may be found that, although it may have been necessary to use a comparatively large total amount of desiccated thyroid to elevate the metabolic rate to the desired level, a daily dose of less than 1 grain (0.065 Gm.) will maintain that level. In the treatment of anorexia nervosa it is important that at least a normal caloric intake be maintained during and after elevation of the metabolic rate to prevent further loss of weight.

It seems advisable also to mention the occurrence of symptoms which are very characteristic of and accompany elevation of the metabolic rate. Patients complain of headache and generalized aching and pain in the muscles and bones. There is a loss of appetite and, at times, nausea. These symptoms usually appear during the second or third day and increase in intensity into the second week, during which they gradually decrease. At the end of three weeks, adjustment to the normal metabolic rate has taken place and such symptoms disappear.

In cases of myxedema, when 12 grains of desiccated thyroid is used as the initial dose, the facial edema begins to disappear on the second and third days and may to a great extent be gone by the sixth day. There may be continued improvement in the general condition over a period of two months or even longer.

It has been our practice at the clinic to adhere to the use of desiccated thyroid prepared by one company, as there is considerable variation in the potency of preparations of desiccated thyroid put out by different companies. While the doses given in this paper may not be found to agree with figures obtained in other instances, the relative dosage will be found to be comparable.

This method of elevating the basal metabolic rate may appear time consuming and unnecessarily detailed, but it has proved in our experience to be the most satisfactory method.

## ARTIFICIAL FEVER TREATMENT. OF CHOREA

### PRELIMINARY REPORT

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Since the installation of three Kettering hypertherms<sup>1</sup> in this clinic in February 1935 we have treated thirteen cases of Sydenham's chorea with artificial fever. Pyretotherapy has been so satisfactory that we wish to report the results at this time.

Sutton<sup>2</sup> in 1931 called attention to the treatment of chorea by the induction of fever with triple typhoid vaccine. Later reports by Sutton and Dodge<sup>3</sup> review the literature pertaining to fever therapy in the treatment of chorea and report satisfactory therapeutic results in 150 attacks of chorea with triple typhoid vaccine. They felt that it materially shortened the course of chorea, thus saving many hospital days. In 1935 these workers<sup>4</sup> continued their studies of fever therapy, using radiant energy in the treatment of rheumatic carditis. These workers conclude that "artificial fever therapy produced by intravenous injection of typhoid vaccine or radiant energy has no harmful effect on carditis in these children." Reports at the fifth annual fever convention at Dayton, Ohio,<sup>5</sup> indicate that "results with artificial fever treatment of twenty-eight cases of chorea have been excellent. Many cases were cured and the majority notably improved. Associated endocarditis was not a contraindication." Desjardins<sup>6</sup> reports the results at the Mayo Clinic, stating: "Nine children with chorea who have been treated have all improved satisfactorily but greater experience will be required to give us a correct perspective on the value of artificial fever in comparison with other methods of treatment." At this clinic we have initiated a long term study of artificial fever therapy of chorea.

From Fever Therapy Department, University of Colorado School of Medicine and Hospitals.

1. This apparatus was conceived and perfected at Miami Valley Hospital, Dayton, Ohio, and at the Research Laboratories of the Frigidaire Division of the General Motors Corporation, Dayton. We are indebted to Dr. Walter M. Simpson and Mr. Charles F. Kettering of the General Motors Company for the privilege of using the apparatus, three hypertherms being now in constant operation at this clinic.

2. Sutton, Lucy Porter: Treatment of Chorea by Induction of Fever: A Preliminary Report, *J. A. M. A.* 97: 1931 (Aug. 1) 1931.

3. Sutton, Lucy Porter, and Dodge, Katherine G.: Treatment of Chorea by Induced Fever, *J. Pediat.* 3: 813 (Dec.) 1933.

4. Sutton, Lucy Porter, and Dodge, Katherine G.: Effects of Fever Therapy on Rheumatic Carditis Associated with Fever, *J. Pediat.* 6: 494 (April) 1935.

5. Hench, P. S.: Clinical Notes on the Results of Fever Therapy in Different Diseases, report of the Fifth Annual Fever Convention, Proc. Staff Meet., Mayo Clin. 10: 662 (Oct. 16) 1935.

6. Desjardins, A. C.: Fever Therapy, *Texas State J. Med.* 31: 191 (July) 1935.

## PROCEDURE

We are using the Kettering hypertherm,<sup>7</sup> an air conditioned cabinet, as a means of inducing artificial fever in the cases treated. In the treatment of the first few cases, fever sessions of two and one-half hours were given at intervals of from three to six days and at temperatures ranging from 103 to 106 F. (rectal). Experience has convinced us that the patients respond more rapidly if the two and one-half hour fever sessions are given daily at temperatures of from 105 to 106 F. (rectal). This procedure materially shortens the entire course of the chorea attack and quickly restores the patient to normal activity. It is our policy to insist on strict rest during the interval between treatments. Many of our cases were outpatients and were cared for in the home, while the more severe choreic cases required hospitalization. A cardiologist has carefully examined the cases with severe cardiac involvement and was consulted during the course of their treatment. The progress of the patient has been used as a guide to the amount of fever necessary.

## CASES

We have classified our chorea cases as mild, moderate and severe. Mild cases imply minimal choreiform movements of an extremity or muscle group with trivial functional incapacity. Those cases classified as moderate show gross choreiform movements of the extremities, trunk and face. These children are unable to perform coordinated acts. They are unable to speak coherently and cannot feed or dress themselves. Hypotonia is a marked symptom. In severe cases there is total incapacity. Attempts at voluntary movements result in violent choreiform movements. The patients cannot speak, there is a marked difficulty in deglutition, and hypotonia is severe.

CASE 1.—A boy, aged 13 years, was referred from the cardiac clinic and treated as an outpatient. Treatment was started March 28, 1935, one month after the onset of a moderate chorea. There had been no previous attacks. Examination revealed advanced rheumatic endocarditis. An electrocardiogram disclosed left axis deviation. He was given ten fever treatments, of two and one-half hours each, of from 103 to 104 F. (rectal), at intervals of from three to four days. Improvement, after the first treatment, was rapid and steady. There was no evidence of chorea after the sixth fever treatment (April 13), but the course of ten treatments was completed. There has been no recurrence to date. He has been followed in the cardiac clinic and is now restored to full activity.

CASE 2.—A youth, aged 16, was admitted to the hospital May 25, 1935, in his first attack of a very severe chorea. The onset occurred seven weeks prior to admission and was associated with acute rheumatic fever and endocarditis. Treatment consisted of eight fever sessions of two and one-half hours, at from 105 to 106 F. (rectal), given at from four to five day intervals. After the third treatment, choreiform movements were present only after excitement. The condition was so severe on admission that intravenous sodium amytal sedation was necessary to carry the patient through the first two sessions. He had recovered on July 3, and he has suffered no recurrences to date. Cardiac conditions were unchanged.

CASE 3.—A girl, aged 11 years, admitted to the hospital June 3, 1935, presented her first attack of a moderate chorea. The onset, six weeks prior to admission, followed an attack of acute rheumatic fever with endocarditis. Roentgen examination showed moderate enlargement of the heart. She was given eight sessions of fever, of two and one-half hours each, at from 105 to 106 F. (rectal), at intervals of from three to four days. Improvement was steady following the first treatment, and there

was no clinical evidence of chorea after the fifth session. A course of eight treatments was completed, July 11. Roentgen appearance of the heart was normal.

CASE 4.—A boy, aged 12 years, was admitted July 13, 1935, in a fulminating attack of severe chorea. There had been no previous attacks. The onset, two weeks before admission, followed an acute rheumatic fever associated with severe cardiac involvement. The heart was markedly enlarged to the left with pericardial effusion. Dyspnea was severe. He was given ten fever sessions of two and one-half hours each, at from 105 to 106 F. (rectal), at intervals of from three to four days. After the first session he was able to talk. After eight treatments (August 6), all evidence of choreiform movements had disappeared. However, at this time, following an infection of the upper respiratory tract, the pericardial effusion increased in amount. Two more treatments were given and the effusion subsided. Six months later examination of the chest revealed the heart to be of normal size without effusion. There has been no recurrence of chorea to date.

CASE 5.—A boy, aged 13 years, received as an outpatient July 9, 1935, suffered from moderate chorea. He had had no previous attacks. Examination revealed clinical evidence of rheumatic endocarditis with decompensation as evidenced by dyspnea, edema of the feet and ankles, and enlargement of the heart. He was given seven treatments of two and one-half hours each, at from 105 to 106 F. (rectal), at intervals of four days. There was no evidence of chorea after the fifth treatment, July 24. There has been no recurrence to date. The cardiac condition has steadily improved and the patient is now on a full activity program.

CASE 6.—A girl, aged 8½ years, admitted to the hospital Aug. 24, 1935, presented a first attack of acute, mild chorea. The onset occurred six days before admission, with no cardiac involvement. Treatment was started immediately. She received twenty-one sessions of fever of two and one-half hours each, at from 105 to 106 F. (rectal), at two to three day intervals. This case presented an unusual aspect in that the chorea became progressively more severe after the first eight treatments. However, following the total course of twenty-one sessions of fever, no choreiform movements were present. She was discharged October 23 as recovered, and there have been no recurrences to date. We have classified this case as severe.

CASE 7.—A boy, aged 11 years, admitted to the hospital Oct. 23, 1935, was suffering from his first attack of a moderate chorea. The onset three months before admission followed an acute attack of rheumatic fever associated with mitral stenosis with insufficiency. Prior to admission to this clinic he had been treated with a series of typhoid injections but had shown no response. Treatments consisted of eight sessions of fever of two and one-half hours each, at from 105 to 106 F. (rectal), given at intervals of from three to four days. He was discharged as cured, November 2. There has been no recurrence to date. The cardiac condition is unchanged.

CASE 8.—A girl, aged 5 years, was admitted Jan. 28, 1936, in her first attack of moderate chorea. The onset was associated with rheumatic fever and endocarditis two weeks prior to admission. Mild decompensation necessitated digitalis. Treatment consisted of four fever sessions of two and one-half hours each, at from 105 to 106 F. (rectal), given daily. She was discharged January 30, and since then there has been no recurrence of the chorea. The cardiac condition has improved and the digitalis has been discontinued.

CASE 9.—A girl, aged 11 years, entered as an outpatient Jan. 30, 1936, suffered from a first attack of moderate chorea. The onset occurred five weeks prior to admission and was associated with an emotional disturbance.<sup>8</sup> Treatment consisted of fifteen daily sessions of two and one-half hours each at from 105 to 106 F. (rectal). Improvement was noted after the first session and following the ninth treatment choreiform movements were noted only on attempts to perform finer coordinated movements. She was discharged February 20 as recovered. There has been no recurrence to date.

CASE 10.—A girl, aged 15 years, admitted Feb. 19, 1936, as an outpatient, suffered from her third attack of moderate chorea. The first attack occurred at the age of 4 and was of several weeks' duration. The second attack of chorea occurred at 11 years and was of one year's duration. The onset of the

7. This apparatus is described in detail in the following articles: (1) Simpson, W. M.: Artificial Fever Therapy in Syphilis, *J. A. M. A.* 105: 2132 (Dec. 28) 1935. (2) Desjardins, A. U.; Stahler, L. G., and Popp, W. C.: Fever Therapy for Gonorrheal Infections: II. *J. A. M. A.* 106: 960 (Feb. 29) 1936.

8. Ebaugh, F. G.: Neuropsychiatric Aspects of Chorea in Children, *J. A. M. A.* 87: 1083 (Oct. 2) 1926.

present attack occurred one month prior to admission. Treatment consisted of ten two and one-half hour fever sessions at intervals varying from one to seven days at rectal temperatures of 105-106 F. (Behavior difficulty of this child influenced the interval of treatment.) The patient was discharged March 12 as recovered.

CASE 11.—A married woman, aged 17, admitted to the hospital Feb. 25, 1936, had severe chorea in her first attack. The onset seven weeks prior to admission was associated with peritonsillar abscess and an emotional upset. Treatment consisted of ten daily sessions, two and one-half hours each, at from 105 to 106 F. (rectal). There was marked improvement after the second treatment and the patient was discharged March 10 as recovered. The severity of the attack required intravenous sodium amyltal sedation during the first treatment.

CASE 12.—A boy aged 8 years, was admitted to the hospital March 4, 1936, in his first attack of moderate chorea. The onset two months prior to admission was associated with rheumatic fever. Our examination revealed no positive cardiac changes. Treatment consisted of daily fever sessions of two and one-half hours each, at from 105 to 106 F. (rectal). He was discharged March 10, following six treatments, as recovered.

a period of forty days. We believe that this was an unusual case in that the attack began as a mild chorea and with fever became severe. Whether or not this severity was due to fever or would have been the natural course in this particular attack is a question. The average amount of fever administered in our cases was twenty-four hours at from 105 to 106 F. (rectal).

The fact that we have had no recurrences to date requires no comment, since the series of treatment was begun only a year ago.

It is our belief that the amount of shock following the injection of triple typhoid vaccine, as shown by chills, vomiting, severe headache, extremely high fever and marked prostration, is a serious contraindication when there is already a badly damaged heart. With artificial fever we are able to avoid such complications and, as our results show, we have had no complications. We believe that there is a distinct advantage of artificial fever produced by mechanical means over the foreign protein method. One advantage to the method that we

Results in Treatment of Chorea with the Kettering Hypertherm

Case	Age	Sex	Duration Before Treatment	Severity	Complications	Number of Treatments, 2½ Hours, 103-106 F. Rectal	Interval (Days)	Total Hours	Duration of Treatment (Days)	Results
						F. Rectal	(Days)	Hours	(Days)	
1	13	♂	4 weeks	Moderate	Endocarditis; rheumatic fever	10	3-4	25	34	Cured
2	16	♂	7 weeks	Severe	Rheumatic endocarditis	8	4-5	20	38	Cured
3	11	♀	6 weeks	Moderate	Mitral insufficiency; dilatation of heart; rheumatic fever	8	3-4	20	38	Cured
4	12	♂	2 weeks	Severe	Rheumatic fever; endocarditis; pericardial effusion; dilatation of heart	10	3-4	25	35	Cured
5	13	♂	3 weeks	Moderate	Mitral insufficiency with dilatation of heart and decompensation	7	3-4	17½	25	Cured
6	8½	♀	6 days	Severe	None	21	2-3	52½	40	Cured
7	11	♂	3 weeks	Moderate	Mitral stenosis with insufficiency	8	3-4	20	30	Cured
8	5	♀	2 weeks	Moderate	Rheumatic fever; endocarditis with decompensation	4	Daily	8½	4	Cured
9	11	♀	4 weeks	Moderate	None	15	Daily	37½	20	Cured
10	15	♀	4 weeks	Moderate	None	10	Irregular, daily-10	25	29	Cured
11	17	♀	7 weeks	Severe	Rheumatic fever	10	Daily	20	6	Cured
12	8	♂	8 weeks	Moderate	None	6	Daily	20	6	Cured
13	7	♂	13 weeks	Severe	None	8	Daily	25	8	Cured

CASE 13.—A boy, aged 7 years, admitted to the hospital March 6, 1936, presented a chronic case of severe chorea. There had been no previous attacks. Treatment consisted of eight daily fever sessions, of two and one-half hours each, at from 105 to 106 F. (rectal). Marked improvement was noted after the first treatment and recovery was evident on March 14.

RESULTS

According to the accompanying table it should be noted that our cases have all been either moderate or severe. It is well known that the duration of chorea, whether treated or not, is usually prolonged, the average case lasting from six to ten weeks and some extending into months. When the interval between sessions was from three to six days (cases 1, 2, 3, 4, 5, 6, 7 and 10) it is noted that the duration of the treatment was naturally longer, averaging about thirty-four days. Since we have changed our policy of treatment to daily sessions (noted in cases 8, 9, 11, 12 and 13) the duration of treatment has dropped to an average of nine days.

At first we were conservative regarding the frequency of treatment because of the cardiac complications but found that our choreic patients could tolerate daily sessions without difficulty.

It should be noted that all our patients recovered. The longest duration of treatment (case 6) was over

have used is the controllability of the temperature. Treatment may be terminated instantly should unforeseen complications arise. Furthermore, a specified dose of fever may be administered at will. None of our cases showed loss of weight during the fever sessions. We are able to maintain an adequate fluid intake by mouth<sup>9</sup> with maintenance of the fluid balance. We feel that this is important, as all the severe and many of the moderate choreic patients are badly dehydrated.

SUMMARY

Thirteen cases of chorea have been treated by artificial fever with the Kettering hypertherm.<sup>10</sup> Results thus far have been excellent, with recovery in all cases. Advanced rheumatic endocarditis has not been contraindicative to treatment. To date there have been no recurrences of chorea, though the period of observation has been short. Mechanically induced fever has certain advantages over induction by triple typhoid vaccine.

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9. From 2,500 to 4,000 cc of 0.6 per cent saline solution is used during each two and one-half hour fever session. The salt solution is necessary to replace chlorides lost by perspiration.

10. Since this paper was submitted for publication, we have treated seven additional cases of chorea; six of these patients have recovered, and one is still under treatment.

RENAL INSUFFICIENCY DEVELOPING  
DURING PROLONGED USE  
OF ALKALIS

REPORT OF A CASE

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The occasional development of alkalosis during treatment with alkalis in individuals suffering from duodenal ulcer has, since Hardt and Rivers<sup>1</sup> description in 1913, been mentioned frequently in the literature<sup>2</sup> and may take place even when no alkali has been used, provided severe intestinal obstruction with loss of chloride ions and of acids occurs.<sup>3</sup> It has even longer been recognized that in renal disease alkalis may not be well tolerated,<sup>4</sup> and the appearance of alkalosis during a course of treatment involving their use has in fact been regarded as evidence that the kidneys were already injured. Hardt and Rivers<sup>1</sup> suggested that prolonged use of alkalis might injure the kidneys, even in the absence of preexisting renal disease. Cases of damage due to this source have subsequently been described by Houghton<sup>3</sup> and by Jordan.<sup>2</sup> Berger and Binger<sup>4</sup> have recently reported a case of renal disturbance in which the renal function was almost certainly normal both before and after the state of alkalosis was observed. In rats it has in fact been shown that feeding alkalis may be followed by severe hematuria although at autopsy no lesion of the kidney is found.<sup>5</sup>

In the case here reported the behavior of the kidneys was studied from the time when damage following the taking of alkali was detected until they once more functioned in a normal manner. In this case, as in Lloyd's, the usual neurologic manifestations of alkalosis, nausea, headache, nervousness and tetany, were absent.

## REPORT OF CASE

C. J., a man, aged 52, a lawyer, had had measles, chickenpox and malaria when he was a child. On several occasions he suffered from influenza. Attacks of tonsillitis were frequent until his tonsils were excised in 1914. Severe infections of his sinuses were frequent until 1930, when a medicinal preparation of some sort afforded him moderate relief. It appears that he complained of "minor stomach troubles" even as a young man. He first began to suffer from indefinite attacks of pain after eating in 1918. For this he took milk and antacid

powders. The diagnosis was thought to be "acid stomach" based on chemical examinations and on the examination of roentgenograms. His pain gradually ceased in about three months. In 1926 pain recurred, more definite than in 1918, appearing regularly from one to one and one-half hours after meals; this attack also was relieved readily when he resumed the milk diet. The third attack in the fall of 1928 was relieved in six weeks by a modified Sippy regimen, which included his taking seven doses of chalk and soda and several glasses of milk a day. In the spring of 1929 pain again occurred. On this occasion an appendicectomy was performed. Afterward he suffered from an attack of bronchopneumonia. When he recovered, the abdominal pain had subsided. The fifth and last attack occurred one year later, in the spring of 1930. He then began to take chalk and soda regularly four or five times a day. The patient believes that difficulties with his stomach have usually followed episodes involving nervous strain or prolonged periods of difficult work or more frequently anxiety concerning his son's welfare.

He remained fairly well until October 1932, when a new train of symptoms began. He became fatigued on the least effort, either physical or mental, and experienced nocturia five

*Recovery of Various Functions of the Kidneys Following  
Cessation of the Taking of Alkalis*

Date	Blood Urea Nitrogen	Urea Clearance, per Cent	Excretion of Phenolphthalein, per Cent	Specific Gravity*	Casts		Red Blood Cells	Albumin
					Hyaline	Granular		
12/ 1/32	41.8	23.4	27.6	1.010	+	+	0	Faint trace
5/ 4/33	21.5	53.5	43.0	1.016	+	+	3 per high power field	Faint trace
6/ 7/33	18.0	63.0	....	.....	+	0	1 per high power field	0
10/11/33	17.1	90.5	....	1.018	(24 hrs.) 80,000	(24 hrs.) 100,000	0	0
5/22/34	15.5	89.5	....	1.019	+	+	0	Very faint trace
1/ 9/35	17.4	148.0†	....	1.026	(24 hrs.) 150,000	(24 hrs.) 450,000	0	0
6/ 9/35	17.7	96.3	....	1.024	14,100	0	211,500	0

\* A sample of urine for this measurement was obtained during the last twelve hours of a twenty-four hour period without fluids and on a dry type of diet.

† This high value has, in all probability, to do with incomplete emptying of the bladder before the beginning of the test, since the values for the separate hours were 190 per cent for the first and 106 per cent for the second hour.

or six times (for fifteen years he had been accustomed to urinate once during the night). He lost about 20 pounds (9 Kg.). November 30 he came for advice because, following the finding of albumin in the urine on two occasions and once a few hyaline and granular casts, his physicians had, in accordance with the knowledge of the course of Bright's disease, offered him a rather grave prognosis.

The patient was well built but lean. The temperature was 98.6 F. by mouth, the pulse rate 81 and respiration rate 20 per minute. The height was 173.5 cm. and the weight 63.2 Kg. The skin was sallow. The ears, nose and throat were essentially normal. There was considerable dental work. The mouth was clean. Engorgement of the peripheral veins was absent. The lungs were clear. The heart was not enlarged to percussion or in the roentgenogram. The aorta was slightly widened. The sounds of the heart were clear and the second sound at the base was somewhat accentuated. A systolic murmur was heard at the apex. The rhythm of the heart was regular. In his electrocardiogram the electrical axis deviated to the left and the T<sub>2</sub> wave was negative. The pulse at the wrist was of fair force. The walls of the radial arteries were just palpable. The arterial pressure measured 164 mm. of mercury systolic, 90 diastolic. Examination of the abdomen brought to notice nothing abnormal. The liver, spleen and kidneys were not felt. There were no masses or areas of tenderness. Edema

From the Hospital of the Rockefeller Institute for Medical Research.

1. Hardt, L. L., and Rivers, A. B.: Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer, *Arch. Int. Med.* 31: 171 (Feb.) 1923.

2. Ellis, A. W. M.: Disturbance of the Acid-Base Equilibrium of the Blood to the Alkaline Side; Alkalemia, *Quart. J. Med.* 17: 405 (July) 1924. Venables, J. F.: Seven Cases of Alkalosis Following Alkaline Treatment for Duodenal Ulcer, *Guy's Hosp. Rep.* 75: 152 (April) 1925. Jordan, Sara M.: Calcium Chloride and Carbon Dioxide Content of Venous Blood in Cases of Gastroduodenal Ulcer Treated with Alkalis, *J. A. M. A.* 87: 1906 (Dec. 4) 1926. Gatewood, W. E.; Gaebler, O. H.; Muntwyler, Edward, and Myers, V. C.: Alkalosis in Patients with Peptic Ulcer, *Arch. Int. Med.* 42: 79 (July) 1928. Cooke, A. M.: Alkalosis Occurring in the Alkaline Treatment of Peptic Ulcer, *Quart. J. Med.* 25: 527 (Oct.) 1932.

3. Tilston, Wilder, and Comfort, C. W., Jr.: The Total Nonprotein Nitrogen and the Urea of the Blood in Health and Disease as Estimated by Folin's Methods, *Arch. Int. Med.* 14: 620 (Nov.) 1914. Brown, G. E.; Eusterman, G. B.; Hartman, H. R., and Rowntree, L. G.: Toxic Nephritis in Pyloric and Duodenal Obstruction: Renal Insufficiency Complicating Gastric Tetany, *ibid.* 32: 425 (Sept.) 1923. Tucker, W. J.: Uremia Following Gastro-Enterostomy, *Wisconsin M. J.* 20: 528, 1922. Houghton, L. W.: Three Cases of Toxemia Following Obstruction Near the Pylorus, *Guy's Hosp. Rep.* 75: 149 (April) 1925. Lloyd, N. L.: Two Cases of Pyloric Obstruction with Alkalemia and Renal Symptoms but No Nervous Symptoms, *ibid.* 75: 157 (April) 1925.

4. Sellards, A. W.: The Determination of the Equilibrium in the Human Body Between Acids and Bases, with Especial Reference to Acidosis and Nephropathies, *Bull. Johns Hopkins Hosp.* 23: 289, 1912. Berger, E. H., and Binger, M. W.: The Status of the Kidneys in Alkalosis, *J. A. M. A.* 104: 1383 (April 20) 1935.

5. Addis, Thomas; MacKay, E. M., and MacKay, L. I.: The Effect on the Kidney of Diets Containing an Excess of Certain Food Elements, *J. Biol. Chem.* 71: 157 (Dec.) 1926.

of the legs was not present. On fluoroscopic examination and in roentgenograms of the upper gastro-intestinal tract a persistent deformity of the duodenal bulb was found on filling with a barium sulfate meal, which suggested to the examiner the presence of duodenal ulcer. At no time was an outline of the opaque medium seen which suggested actual filling of the crater of an ulcer. On ophthalmoscopic examination slight sclerosis and some tortuosity of the retinal arteries and indentation of the veins were apparent. Observations with regard to the urinary constituents and renal function are more easily comprehended in the form of a table. December 1 the ability of the kidneys to excrete urea and to concentrate the urine was markedly impaired. The level of the urea nitrogen in the blood was elevated. The presence in the sediment of casts was taken as evidence that renal damage was, at the moment, taking place. The reaction of the urine to litmus was alkaline.

This patient, then, while taking large doses of alkali daily for the relief of abdominal pain, was found to be suffering from diminution of renal function of sufficient magnitude to elevate the urea nitrogen level of the blood. A moderate degree of general arteriosclerosis was present. It was thought that taking alkalis might have played a part in increasing the damage to kidneys already the seat of changes of arteriosclerotic Bright's disease. He was instructed, therefore, to refrain from taking alkalis except for the relief of pain, and a diet designed to contain little residue was recommended. Viosterol and liver extract were added to complete the diet. He was discharged December 2.

In the latter part of February 1933 he suffered severe intestinal hemorrhage while in Egypt. In addition to a more restricted diet, bismuth carbonate, triple basic magnesium phosphate and olive oil were prescribed. On May 4, except for a gain in weight of 5.31 Kg., there was little change in his general physical state. He said, however, that he felt less fatigued than he had for some time. Tests of renal function and examination of the urine were repeated. Considerable improvement had occurred as is brought out in the accompanying table. He was then taking a bland diet, six "alucol" (colloidal aluminum hydroxide) tablets and a pint of milk daily. Other alkalis were not used. Since this time there have been no gastro-intestinal complaints. Steady gain in weight, relief from ready fatigue and decrease in frequency of nocturia followed and, as can be seen from the table, apparent recovery from the renal disturbance. Within six months the blood urea nitrogen returned to normal and has remained so since. In ten months the urea clearance rose to a normal level and has remained so. The power of the kidneys to concentrate the urine rose slowly to normal during a period of two years. Casts (almost entirely hyaline) and red blood cells continue to be present in numbers no greater than those normally encountered, and faint traces of albumin appear from time to time in the urine.

#### COMMENT

The course of this patient's illness illustrates several points which deserve emphasis. It appears that an individual may consume relatively large quantities of alkali for a number of years before signs of renal dysfunction appear. Second, it is worthy of comment that evidence of severe renal injury may occur before the development of obvious symptoms of alkalosis. This sequence of events has been noted by Lloyd.<sup>3</sup> In this instance fatigue and nocturia were the only complaints. Third, judging from the improvement of renal function subsequent to cessation of the use of alkalis, it appears unlikely that renal lesions, which if present must have been extremely slight, could have been responsible for the retention of alkalis. Fourth, the observation of Binger, Hastings and Neill<sup>7</sup> and of Myers and Booker<sup>8</sup>

that some individuals with apparently normal kidneys cannot readily excrete alkali is important. The subject of the present report does not, however, appear to belong to their group, since the urine was alkaline to litmus. Unfortunately, there is no evidence to show that alkalosis existed, since the notion that disturbance of the acid-base balance of the blood may have taken place was not recognized until after considerable improvement had occurred. Finally, in this condition as well as in the usual varieties of nephritis, as Alving and Van Slyke<sup>9</sup> have pointed out, recovery of the power of the kidneys to concentrate urine lags well behind the recovery of the ability to secrete urea.

#### SUMMARY

The use of alkali through a span of many years for the relief of pain due to a duodenal ulcer was followed eventually by the passage of albumin, red blood cells and casts in the urine, and the appearance of severe renal insufficiency, as indicated by elevation of the urea nitrogen of the blood and marked decrease in the ability of the kidneys to excrete urea and to concentrate the urine. Recovery followed discontinuance of the use of alkalis. This train of events occurred in the absence of signs of alkalosis.

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## CAROTENEMIA IN DIABETES

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Xanthosis in diabetes is due to an accumulation of lipochrome pigments in the blood, the most conspicuous of which has proved to be carotene. Some authors<sup>1</sup> explain the hypercarotenemia occurring in diabetes by the increased content of carotene in the diabetic diet; others,<sup>2</sup> however, believe that the accumulation of carotene in the blood of diabetic patients is due to a disturbance in the metabolism of carotene which is connected with the metabolic disturbance due to the diabetes. This question deserves more than merely theoretical interest, because the biologic importance of carotene as the precursor of vitamin A is generally accepted.

I have tried to solve the problem by studying the response of the carotene content of the blood in diabetic and in nondiabetic subjects after the administration by mouth of a solution of carotene in oil (0.3 Gm. of carotene per hundred cubic centimeters of oil).

Table 1 shows that the carotene in oil given to healthy subjects in a single dose by mouth appears in the blood rather late, that is, certainly not during the first four hours but from eight to twelve to twenty-four to thirty-six hours after its administration, in spite of the fact that the solvent oil may be grossly recognized by the milky appearance of the serum from one to two hours

9. Alving, A. S., and Van Slyke, D. D.: The Significance of Concentration and Dilution Tests in Bright's Disease, *J. Clin. Investigation* 13: 969 (Nov.) 1934.

From the Babies and Childrens Hospital of Cleveland and the Department of Pediatrics, Western Reserve University School of Medicine.

1. Bürger, M., and Reinhart, A.: Ueber die Genese der Xanthosis diabetica, *Deutsche med. Wchnschr.* 45: 430, 1919. Wendt, H.: Beiträge zur Kenntnis des Carotin- und Vitamin-A Stoffwechsels, *Klin. Wchnschr.* 14: 9 (Jan. 5) 1935.

2. (a) Umber: Diabetische Xanthosis, *Berlin, klin. Wchnschr.* 53: 829, 1916. (b) Rabinowitch, I. M.: Carotinemia and Diabetes: II. The Relationship Between the Sugar, Cholesterol and Carotene Contents of Blood Plasma, *Arch. Int. Med.* 45: 586 (April) 1930.

6. Dr. Thomas R. Brown was consulted in June 1933. He prescribed treatment for the disorder of the gastro-intestinal tract.

7. Binger, C. A. L.; Hastings, A. B., and Neill, J. M.: Edema Associated with Moderate Bicarbonate Administration During Convalescence from Pneumonia, *Arch. Int. Med.* 31: 145 (Jan.) 1923.

8. Myers, V. C., and Booker, L. E.: Observations on the Excretion of an Acid Urine in Alkalosis, *Proc. Soc. Exper. Biol. & Med.* 22: 512, 1925.



after administration. The most likely explanation of the delayed appearance of the carotene in the blood serum is that the pigment may be temporarily retained in the liver.

In order to determine the carotenemic reaction after enteral administration of the pigment to diabetic and nondiabetic subjects, it was consequently necessary to administer the carotene for four consecutive days, in three daily doses of 2 cc. each, and to determine the carotene content of the blood every second day for the two weeks following. Connor's<sup>3</sup> method was used, with the slight modifications described in a previous paper.<sup>4</sup>

Table 2 gives the essential clinical data concerning the ten diabetic children on whom the studies were made, and in the upper half of the accompanying chart are presented curves showing the effect on the carotene content of their blood serum. The figures in the first column of table 2 correspond to those placed at the beginning of each curve in this part of the chart, each curve thus representing the child so numbered in table 2.

The curves in the lower half of the chart show the effect on the carotene content of the blood serum of the twelve nondiabetic subjects who were used as controls. These were healthy children, free from infection of any kind, and were of the same age as the diabetic children.

The marked differences between the curves for the diabetic and the nondiabetic children may be easily seen. In the first place, as has already been stated, the fasting level of carotene is higher in the blood of the diabetic subjects, the average value being 0.592 mg. per hundred cubic centimeters compared with 0.254 mg. in the control group.

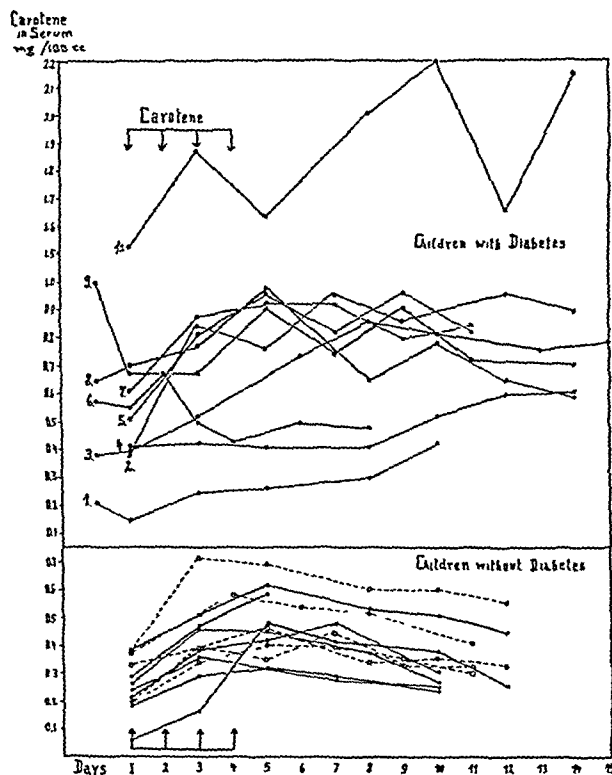
It can be seen from the data in table 2 that the degree of hypercarotenemia runs parallel to the duration of the diabetes except in the case of child 6, who had a definite hypercarotenemia in spite of having suffered from the disease for only two months. The parallelism between the fasting level of the carotene in the blood serum and the duration of the diabetes does not, however, answer the question whether the hypercarotenemia in diabetes is caused by a dietary or by a metabolic factor.

In order to eliminate the possible nonspecific influence of ketosis, which was present to greater or less extent in each of the diabetic patients studied, five of the nondiabetic children were placed on a ketogenic diet in which the ketogenic-antiketogenic ratio varied from 2.5:1 to 4:1. The results obtained with these five children are recorded by the broken lines and open circles in the lower half of the chart.

The second deviation, noticeable when the curves for the diabetic children are compared with those for the healthy children, occurs in five of the ten diabetic children. I have in mind the more or less marked retardation in increase in the carotene content of the blood serum after the administration of the carotene solution to children 1, 3, 4, 6 and 9. The data presented in table 2, however, show that these five children were ill with infections, while the remaining five diabetic patients, who did not show a retarded increase in carotene content of the blood serum, were free from infections.

Investigations by Clausen<sup>5</sup> and myself<sup>4</sup> have definitely shown that infections, whatever their nature may be, interfere greatly with the intestinal absorption of this pigment. The kind of interference just referred to in diabetic patients has been described by Clausen and by myself in nondiabetic children suffering from infections. Since this retarded absorption was not observed in the diabetic children who were free from infections (children 2, 5, 7, 8 and 10), there is consequently no doubt that the deviation from the normal as revealed by the curves has nothing whatever to do with the diabetic condition.

The third and specific deviation shown by the curves of the diabetic patients lies in the decreasing limb of the curve. If infections have not interfered with a sufficiently distinct increase in the carotene content of the



Curves showing the effect on the carotene content of the blood serum after administration of carotene in oil by mouth to ten diabetic and twelve nondiabetic children for four consecutive days, in three daily doses of 2 cc. each. The curves in the upper half of the chart show the carotenemic response in the diabetic children and are numbered to correspond with the clinical data for these children given in table 2. The curves in the lower half of the chart show the carotenemic reaction in the nondiabetic, healthy children used as controls. The broken lines and open circles represent the response in the five children in whom a ketosis was established by a ketogenic diet.

blood serum (as is the case in all the diabetic children studied except children 6 and 9), the curves remain elevated, failing to show the normal decline after the administration of carotene has been discontinued, or they even keep on rising (children 1, 2, 3, 4 and 10) for a period of from ten to fourteen days. The normal shape of the curves obtained in the five healthy children in whom a definite ketosis and acetonuria were induced by ketogenic diet rules out the possibility that the pathologic shape of the diabetic curves might have been due to the accumulation of ketone bodies. The nature of the diabetic hypercarotenemic reaction corresponds to the hyperglycemic

3. Connor, C. L.: Studies on Lipochrome III. The Quantitative Estimation of Carotin in Blood and Tissues, *J. Biol. Chem.* 77: 619 (May) 1928.

4. Heymann, Walter: Absorption of Carotene, *Am. J. Dis. Child* 51: 273 (Feb) 1936.

5. Clausen, S. W.: Limits of the Anti-Infective Value of Provitamin A (Carotene), *J. A. M. A.* 101: 1384 (Oct. 28) 1933.

response obtained in diabetic patients after the oral administration of sugar when the normal decline of the increased sugar content is similarly retarded. The analogous carotenemic reaction in diabetes, accordingly, can be regarded as a symptom of faulty utilization of carotene.

It is not surprising to find that the high fasting level of carotene in the blood serum, as well as the hypercarotenemic reaction, persists in diabetic patients who have been clinically sufficiently provided with insulin. The efficacy of insulin is known to increase slowly, to reach its peak after from two to three hours, and subsequently to decrease during the next two to three hours. Even when two or three doses of insulin a day are given, there still remain from six to twelve or more

between the diabetic carotenemia and the hypercholesterolemia, becomes unlikely because it has furthermore been shown<sup>2b</sup> that the diabetic hypercholesterolemia and hypercarotenemia do not always parallel each other. I therefore would prefer to look on the disturbance of the carotene metabolism occurring in diabetes as another and thus far not well understood consequence of the faulty utilization of sugar, just as the pathologic utilization of fat and cholesterol in diabetes is regarded.

## SUMMARY

The blood serum carotene curves obtained in ten diabetic children after the administration by mouth of carotene in oil were distinctly different from those obtained in twelve nondiabetic, healthy children and

TABLE 1.—Observations Showing That Carotene in Oil Given by Mouth in a Single Dose to Healthy Subjects Does Not Appear in the Blood Until from Twelve to Twenty-Four Hours After Its Administration

Name	Age, Months	Body Weight, Gm.	Amount of Carotene in Oil Given by Mouth, Mg.	Carotene Content of Blood Serum (Mg. per 100 Cc.)									
				Fasting	½ Hr.	1 Hr.	2 Hrs.	3 Hrs.	4 Hrs.	8 Hrs.	12 Hrs.	24 Hrs.	36 Hrs.
B. P.	2½	3,500	20	0.082	.....	0.082	0.090	0.090	.....	.....	.....	.....	.....
J.	5	6,000	60	0.082	.....	0.070	0.070	0.082	0.082	.....	.....	.....	.....
W. F.	4	4,600	100	0.082	.....	0.082	0.082	0.094	.....	.....	.....	.....	.....
D. B.	12	9,300	44	0.152	.....	.....	.....	.....	0.152	0.152	0.175	0.246	.....
K. T.	1	3,200	30	0.140	.....	.....	.....	.....	.....	.....	0.060	0.095	.....
C. M.	108	26,000	80	0.421	.....	.....	.....	.....	.....	.....	0.421	0.386	0.538
W. T.	156	36,000	70	0.182	.....	.....	.....	.....	0.199	0.211	.....	0.363	.....

TABLE 2.—Clinical Data Concerning the Ten Diabetic Children Given Carotene in Oil by Mouth, for Four Consecutive Days, in Three Daily Doses of 2 Cc. Each\*

Case†	Age, Years	Sex	Duration of Diabetes, Years	Evidence of Infection	Acetone-uria	Diet, Gm. per Day			Amount of Insulin per Day, Units	Average Fluctuation of Blood Sugar During Study, Mg./100 Cc.		Fasting Level of Carotene in Blood Serum, Mg./100 Cc.	Comment
						Protein	Fat	Carbohydrate		Minimum	Maximum		
1	11	Q	1½	Common cold	++	35	110	75	20-20-40	200	600	0.275	Precoma; dehydration
2	4	Q	1½	Negative	(+)	25	82	140	5-5-5	42	250	0.375	Not comatose; no dehydration
3	7	Q	1½	Common cold	++	35	95	85	25-10	40	360	0.390	Precoma; dehydration
4	12	Q	2¼	Pharyngitis	+	40	95	120	15-5-5	69	920	0.410	Not comatose; no dehydration
5	8	Q	2¼	Negative	++	30	90	60	5-5	52	300	0.515	Not comatose; no dehydration
6	7	Q	½	Otitis externa and media	—	35	96	100	6-10-6	60	300	0.580	Not comatose; no dehydration
7	10	Q	5	Negative	++	40	125	100	25-10	50	400	0.620	Not comatose; no dehydration
8	10	Q	6½	Negative	+	40	105	100	14-0-10	120	260	0.620	Not comatose; no dehydration
9	4	Q	2	Tuberculosis	+	25	56	100	7-5-3	95	456	0.994	Not comatose; no dehydration
10	4½	Q	2¼	Negative	++	25	56	100	9-4-3	65	400	1.521	Not comatose; no dehydration

\* The solution of carotene contained 0.3 Gm. of carotene per hundred cubic centimeters of oil.

† The carotenemic reaction of these children is shown in the accompanying chart, the curves in the chart being numbered to correspond to the numbers in this table.

hours in which the intermediary carbohydrate metabolism cannot be regarded as entirely normal. The large fluctuations seen in the blood sugar level (table 2) in diabetic children to whom insulin was being given in adequate doses demonstrate clearly what has already been stated. It is clear, therefore, that the fasting level of the blood sugar and the fasting level of the carotene content of the blood of diabetic patients do not parallel each other, as has been pointed out by Rabinowitch.<sup>2b</sup> This fact, consequently, does not speak against the assumption that the faulty utilization of carotene demonstrated in these studies in diabetic patients is primarily related to the disturbance of the carbohydrate metabolism.

Another possible explanation of the hypercarotenemic reaction described in this paper, namely, the relationship

demonstrated that the metabolism of carotene is interfered with in diabetes.

The carotene content of the blood, when it was once increased in the diabetic patients, failed to show the normal decline and remained elevated or even kept on increasing for from ten to fourteen days after the administration of the carotene in oil had been discontinued. The analogy with the hyperglycemic reaction after sugar is given by mouth to diabetic patients is striking and speaks in favor of assuming that the utilization of carotene has been interfered with in diabetes.

The diabetic carotenemia can consequently no longer be explained merely by the high carotene content of the diabetic diet.

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## ORCHITIS AND OOPHORITIS PAROTIDEA (OSLER)

## REPORT OF TWO CASES

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Orchitis as a complication of mumps is a commonplace incident, the frequency of which has been placed by some authors<sup>1</sup> at between 10 and 25 per cent of cases, while others quote an incidence as high as 50 per cent<sup>2</sup> in certain epidemics. It is said that the orchitis may appear in from two to sixteen days after the parotitis, and most commonly in from four to eight days. The fever tends to persist for from two to six days and falls by lysis. A rather imposing proportion of atrophy, as high as 60 per cent according to Catrin,<sup>3</sup> is said to occur in the absence of operation, which, briefly, has in the reported cases consisted in the making of incisions in the tunica albuginea. Vezeaux de Lavergne and Florentin,<sup>4</sup> and Teissier recommend convalescent serum as an effective prophylactic against orchitis.

Ovarian involvement is uncommon enough to warrant more than passing attention, and but few and isolated instances of this phenomenon are recorded in the literature. Involvement of either the male or the female gonad is definitely inclined to appear as a late complication. According to Osler,<sup>5</sup> "the orchitis may occur before the parotitis, or in rare instances may be the only manifestation of the infection (orchitis parotidea)." He states succinctly that "involvement of the ovaries is rare."

The fact remains that cases of primary orchitis due to the virus of mumps are out of the ordinary,<sup>6</sup> while orchitis parotidea sans parotitis is observed but seldom. Bieberach and Vider in a recent report have added a case of the latter type to the literature, which previously contained, according to them, only sixty-four instances of this condition. Dillard<sup>7</sup> discusses certain facts of diagnostic importance and quotes, almost verbatim, the scholarly description of the pathology written by S. B. Wolbach, which was included in an article by George G. Smith.<sup>8</sup> The ovaries, perhaps owing to their relatively secure and protected position, are, as already stated, rarely involved even as a secondary complication. Mastitis and pancreatitis (abdominal mumps), uncommon sequelae of parotitis, are yet less unusual than oophoritis. Harlow Brooks<sup>2</sup> reports two cases of secondary oophoritis and concludes that the phenomenon is very unusual. He further emphasizes the benign nature of the ovarian involvement quite in distinction to the frequent destructive effects on the male cell. There is, to my knowledge, no reported case of primary oophoritis due to mumps without subsequent parotitis.

while primary ovarian inflammation followed at an interval by parotid disease has been cited but exists only as a curiosity. Gueit<sup>9</sup> in 1913 reported a somewhat doubtful case of primary oophoritis in a woman, aged 21, in which the parotitis ensued on the sixth day following the onset of the abdominal symptoms. This author, as well as Brooks, mentions the differential confusion arising between right-sided oophoritis of this type and appendicitis, particularly in view of the fact that the pathologic changes in question are prone to present themselves in young individuals in whom careful pelvic examinations may not be feasible.

The following reports present an instance of the unusual orchitis parotidea sans parotitis along with one of the very exceptional primary oophoritis due to the virus of mumps:

## REPORT OF CASES

**CASE 1.—History.**—A man, aged 27, single, the occupant of a rooming house, first seen on Oct. 18, 1929, complained chiefly of pain in the region of the right testicle, which in a few hours exhibited definite and progressive swelling, accompanied by pronounced tenderness to pressure. Concomitant aching sensations in the muscles of the lower part of the back and legs ensued, with symptoms of fever and prostration. The patient stated that there had been no urethral discharge and no recent venereal exposure. Interrogation revealed the existence, about two and one-half weeks previously, of cases of typical mumps in two of the landlord's children, and the fact that a third child was showing ominous symptoms.

The patient was positive that he had never had mumps. He likewise stated that he had not had a venereal disease.

**Examination.**—The patient was well nourished and muscular, and examination presented no important physical changes with the following exceptions: The temperature was 100 F. and the pulse 94. The right portion of the scrotum was moderately swollen and rather tense and showed increased local temperature. Careful palpation gave the impression that the swelling involved both testicle and epididymis, both of which had increased to about twice the normal dimensions. The process impressed one as being definitely less fulminant than the average case of gonorrheal origin; that is, there was less local heat, not such extreme tenseness, and a less exquisite tenderness to pressure.

Laboratory examination, October 18, revealed 7,800 white blood cells, with 38 per cent polymorphonuclears, 57 per cent lymphocytes, 4 per cent large mononuclears and 1 per cent eosinophils. November 2 the white blood cells numbered 7,600, with 60 per cent polymorphonuclears, 36 per cent lymphocytes and 4 per cent large mononuclears. The urine, October 18, was normal.

**Treatment and Progress.**—The patient was confined to bed, a nest of absorbent cotton fitted around the involved organ, and adhesive tape applied for suspension. The process began to subside after four days and the patient became ambulant on the tenth day. Increased firmness of the testicle to palpation persisted, but at eight months no atrophy was discernible. At no time during the course of this condition was any involvement of the salivary or other remote glandular structures observed.

**CASE 2.—History.**—A robust girl, aged 18 years, admitted May 2, 1932, complained chiefly of pain in the right lower quadrant of the abdomen.

The patient stated that she had been annoyed by a "slight stomach ache" for about forty-eight hours. Six hours before she presented herself this mild symptom was superseded by a severe cramplike pain localized in the right lower quadrant. Some nausea was present but no vomiting. There had been no evidence of recent respiratory infection. Her last menstrual period had terminated about ten days previously, and there had been no subsequent vaginal discharge. She had not defecated during the twenty-four hours prior to admission and had indulged in no catharsis or enemas prior to admission. Urinary symptoms were absent.

9. Gueit, C.: Ovaritis, Due to Mumps and Specific Parotitis, *Montpellier méd.* 37: 199, 1913.

1. Hallenger, E. G., and Elder, O. F.: Orchitis from Mumps, *J. A. M. A.* 75: 1257 (Nov. 6) 1920.

2. Brooks, Harlow: Involvement of the Ovary in Epidemic Parotitis, *J. A. M. A.* 60: 359 (Feb. 1) 1913.

3. Catrin: Orchitis ourlienne, *Bull. et mém. Soc. méd. d. hôp. de Paris* 11: 108-123, 1894.

4. Vezeaux de Lavergne and Florentin: Prévention de l'orchitis ourlienne par injection de sérum de convalescents, *Bull. Acad. de méd., Paris* 93: 362-364 (March 31) 1925.

5. Osler, William: Principles and Practice of Medicine, New York, D. Appleton & Co., 1930.

6. Waddelow, J. J.: Primary Epididymitis in Mumps, *Brit. M. J.* 1: 1480, 1909. Edwards, L. B.: Primary Testicular Mumps, *J. A. M. A.* 33: 963 (Oct. 14) 1899.

7. Dillard, G. J.: Orchitis, Due to Mumps Without Involvement of the Salivary Glands, *J. M. A. Georgia* 23: 95 (March) 1934.

8. Smith, G. G.: Two Cases of Orchitis, Due to Mumps, Treated by Operation, *Boston M. & S. J.*, 1912.

The past history was irrelevant except for the fact that intermittent attacks of transient abdominal pain had been observed for the past two years. She felt that these attacks were similar to the onset of the present illness.

**Examination**—The patient was in considerable pain. The temperature was 99 F., pulse 100. The blood pressure was 118 systolic, 80 diastolic. There was no suggestion of a pathologic condition above the diaphragm. Abdominal palpation revealed tenderness rather definitely localized to the right lower quadrant, where spasm of the rectus muscle was elicited. There was no costovertebral tenderness. No evidence of discharge or inflammatory reaction was present about the introitus or the urethra. Digital rectal examination, combined with abdominal palpation, elicited pain, the source of which was thought not to be in the uterine adnexa.

Catheterized urine was entirely negative. A blood count was not done at this time. A blood count taken May 6 revealed 9,000 total white blood cells, with 30 per cent polymorphonuclears, 65 per cent lymphocytes, 4 per cent large mononuclears and 1 per cent transitionals.

**Treatment and Progress**.—In view of these observations we were unable to rule out appendicitis, and, accordingly, a laparotomy was performed. The appendix was found to be somewhat injected but otherwise grossly normal and was not considered to be the instigating factor. It was, however, removed as a routine. Palpation of the pelvic structures revealed a considerable enlargement of the right ovary. This was visualized and estimated to be about one and one-half times larger than its fellow on the left. It was firm and elastic to palpation and had a peculiar edematous appearance. The surface presented an unusual bluish tint, interspersed with a few very minute petechiae. Since no impression of an ordinary inflammatory or purulent change was manifested, the abdomen was closed without drainage.

For forty-eight hours the postoperative progress was uneventful. On the third day, however, the temperature, which had not exceeded 100 F., abruptly rose to 102, and the patient complained of aching sensations in both parotid areas. Swelling appeared and rapidly became extreme, presenting the picture of an unusually high degree of bilateral mumps. A rather disquieting reaction was provoked by this sequence of events, and marked prostration with striking elevation of pulse and considerable local distress persisted for about sixty hours, at which time an abrupt amelioration of the symptomatology ensued. There was at no time any suggestion of suppuration, fluctuation or other sign that we were dealing with a condition any different from the epidemic type of parotitis; the parotid swelling abated gradually, while the surgical convalescence, apparently not distorted, was uneventful.

#### COMMENT

It is interesting to recall the rather definite similarities existing in the appearance of the involved ovary in case 2 and that of the testicles exposed at operation by other workers.<sup>10</sup>

There would seem to be little doubt concerning the authenticity of this case of oophoritis parotidea. No other logical explanation for the appearance of the ovary, especially in the light of subsequent developments, can be readily advanced. It is unfortunate that a specimen for microscopic study was not obtained. The whole subsequent clinical picture, including the general physical condition of the patient, the chronological sequence of events leading to the development and subsidence of the parotid involvement and the physical characteristics of the salivary protuberances was definitely not that of the suppurative postoperative type of parotitis. We were convinced, incidentally, that the exposure and manipulation of the offending ovary were important factors in the prompt development and full blown picture assumed by the parotitis. Whether without operation the parotids would have

remained unsullied and the case run its course ("full many a flower is born to blush unseen") as one of oophoritis parotidea sans parotitis is idle speculation.

It is probable that this excessively unusual pathologic process will always present enough similarity to acute appendicitis to suggest operative intervention strongly, even granting that watchful waiting and astute differential diagnostic efforts would surely be rewarded by cognizance of the true state of affairs.

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## GONORRHEAL VAGINITIS

### RESULTS OF TREATMENT WITH DIFFERENT PREPARATIONS AND AMOUNTS OF ESTROGENIC SUBSTANCE

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In 1933 one of us<sup>1</sup> described the administration of estrogenic substance as a practical method of treating gonorrheal vaginitis in children. Eight cases treated in this way with marked success were reported. The fact was established that sufficient estrogenic substance given to girls would bring about a temporary maturation of the undeveloped vaginal mucosa. The clinical results in these cases indicated that therapy with estrogenic substance was likely to be successful. Edgar Allen<sup>2</sup> had previously described a similar reaction induced in immature monkeys by treatment with estrogenic substance.

Since the publication of this article a number of reports on the results of therapy with estrogenic substance have appeared in the literature.<sup>3</sup> With one exception (so far as we know) each author has reported gratifying results.<sup>4</sup> Witherspoon<sup>5</sup> reported a total of ten cases treated without benefit. He used, however, a relatively small daily or nearly daily dosage of a preparation which both we and TeLinde have found unsatisfactory. In other reports therapy with estrogenic substance has yielded satisfactory and, in some cases, brilliant results.

During the past two years a study, generously financed by the Milbank Foundation, has been conducted in the Children's Medical Service of Bellevue Hospital, Department of Pediatrics, New York University. Supplementary work has been carried on in

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1 Lewis, R. M. *Am. J. Obst. & Gynec.* **26**: 593 (Oct.) 1933.

2 Allen, Edgar. *J. Morphol.* **72**, 246, 1928.

3 Brown, Joseph. *Treatment of Gonorrheal Vaginitis in Immature Girls*, J. A. M. A. **102**: 1293 (April 21) 1934. Huberman, John, and Israeloff, H. H. *Therapeutic Value and Effects of Amniotin in Gonorrheal Vaginitis in Children*, J. A. M. A. **103**: 18 (July 7) 1934. Miller, J. R. *Am. J. Obst. & Gynec.* **29**: 553 (April) 1935. Goldberger, L. E., Miner, C. L., and Smith, E. L. *J. Pediat.* **7**: 401 (Sept.) 1935. Nabarro, D., and Signey, A. G. *Lancet* **1**: 604 (March 16) 1935. TeLinde, R. W., and Brawer, J. N., Jr. *Am. J. Obst. & Gynec.* **30**: 512-523 (Oct.) 1935. Reading, Boyd. *South. M. J.* **28**: 464 (May) 1935.

4 Since completing this paper our attention has been called to a report by R. B. Phillips (*New England J. Med.* **213**: 1026-1029 [Nov. 21] 1935). Phillips treated thirteen cases of true gonococcal vaginitis or suspicious cases with theelin in oil—from 2,310 to 2,970 international units per week. All cases eventually yielded negative smears, but "pus" relapsed. Of these nine, three yielded positive smears and six "pus" relapsed.

5 Witherspoon, J. T. *Treatment of Gonorrheal Vulvovaginitis in Childhood with the Ovarian Follicular Hormone*, *Am. J. Dis. Child.* **50**, 913 (Oct.) 1935.

the New Haven Hospital by Alfred Cohn, Louis Weinstein and others. In all, 165 children with gonorrheal vaginitis have been diagnosed and treated by different methods. Various preparations and amounts of estrogenic substance have been used. In this paper only those giving definite results are mentioned. A number of cases in which results were inconclusive because of irregular or inadequate treatment are not included.

In our experience treating gonorrheal vaginitis of children with various local antiseptics has often proved difficult, and the results have usually been unsatisfactory. The number of preparations available are legion and no one can have tried all that are recommended. Generally speaking it is difficult to see how antiseptics can be relied on to destroy organisms that have penetrated and are thriving beneath the epithelium. We thought originally that the mere histologic change involved in temporarily converting the very thin vaginal mucosa of the child to the far thicker and partly cornified structure of the adult adequately explained the destruction of the invading gonococci. Further studies have convinced us that the curative result is in all likelihood due not to the histologic change alone but to a striking change in the reaction of the vaginal secretions. The nearly neutral reaction normal in childhood changes to a marked acidity which always accompanies the temporary maturation of the mucosa.

In view of the results with estrogenic substance that we as well as others have obtained, we believe that our

TABLE 1.—Cases Presenting Gonorrheal Vaginitis in Which Negative Vaginal Smears Developed in Response to Treatment with 800 International Units of Estrogenic Substance in Ethylene Glycol Administered Hypodermically

Case	Age	Duration Before Treatment	Total Dosage, International Units	Weeks Until Negative	Follow-Up	
					Time	Result
1	6 yrs.	1 day	12,400	4 wks.	20 mos.	Well
2	3 yrs.	1 yr.	8,800	6 wks.	10 mos.	Well
3	3 yrs.	4 mos.	6,400	4 wks.	10 mos.	Well
4	5 yrs.	3 wks.	34,400	12 wks.	17 mos.	Well
5	9 yrs.	Acute	12,400	3 wks.	7 mos.	Well
6	4 yrs.	Chronic	21,200	22 wks.	9 mos.	Well
7	2 yrs.	2 wks.	10,400	5 wks.	18 mos.	Well
8	5 yrs.	5 mos.	10,400	10 wks.	4 mos.	Well
9	2½ yrs.	1 wk.	23,600	9 wks.	15 mos.	Well
10	7 yrs.	6 days	80,800	10 wks.	12 mos.	Well
11	7 yrs.	6 mos.	20,800	7 wks.	15 mos.	Well
12	11 yrs.	Chronic	40,000	7 wks.	7 wks.	Well
13	8 yrs.	2 mos.	21,600	10 wks.	11 mos.	Well
14	8 yrs.	Chronic	42,000	4 wks.	15 mos.	Well
15	7 yrs.	7 yrs.	14,000	2 wks.	5 mos.	Well
16	7 yrs.	6 days	56,800	11 wks.	11 mos.	Well
17	3 yrs.	3 wks.	18,000	13 wks.	6 mos.	Well
18	7 yrs.	6 days	18,000	9 wks.	13 mos.	Well
19	3 yrs.	2 mos.	59,200	11 wks.	4 mos.	Well
20	3 yrs.	10 mos.	11,200	2 wks.	13 mos.	Well
21	8 yrs.	2 wks.	45,600	20 wks.	8 mos.	Well
22	5½ yrs.	Acute	27,600	14 wks.	15 mos.	Well
23	3 mos.	Acute	43,200	13 wks.	2 mos.	Well
24	8 yrs.	3 days	25,600	10 wks.	10 mos.	Well
25	4 yrs.	Acute	40,200	17 wks.	15 mos.	Well
26	7 yrs.	Acute	22,000	12 wks.	14 mos.	Well
27	4 yrs.	Acute	44,000	8 wks.	3 wks.	Well

first impression was correct; namely, that in gonorrheal vaginitis of children the infection is ordinarily confined to the vaginal mucosa and submucosa and that the endocervix is but rarely involved. It goes without saying that the cervix should be inspected for infection in every case in which this can be done without too much difficulty. In all cases in which infection lingers after adequate therapy, the cervix should be examined even if anesthesia is required to get a clear view. If endocervical infection is found in the unusual case, cauterization is indicated.

It is recognized that positive smears and positive cultures of gonococci can often be obtained from the rectum in cases presenting gonorrheal vaginitis.<sup>6</sup> This was confirmed by Alfred Cohn in those of our patients whom he studied. In eleven cases that yielded gonococci on vaginal smears, four cultures from the rectum also gave positive results. The rectal infection appears to be superficial and clears up in the great majority of

TABLE 2.—Cases Presenting Gonorrheal Vaginitis Treated by Daily Doses of 2,400 International Units of Estrogenic Substance in Ethylene Glycol Hypodermically

Case	Age	Duration of Disease	Total Dosage, International Units	Weeks Until Negative	Follow-Up	
					Time	Results
1	3 yrs.	Acute	56,800	6 wks.	9 mos.	Well
2	4 yrs.	1 wk.	102,400	2 wks.	1 mo.	Well
3	6 yrs.	Acute	37,600	2 wks.	7 mos.	Well
4	2 yrs.	Acute	53,600	4 wks.	.....	Recurred in 1 mo.
5	3 yrs.	Acute	100,800	4 wks.	.....	Recurred in 2 mos.
6	8 yrs.	6 wks.	49,600	2 wks.	.....	Well
7	2 yrs.	Acute	60,000	3 wks.	2 wks.	Well
8	18 mos.	Acute	54,400	4½ wks.	3 wks.	Well

cases *pari passu* with the vaginal infection. Only rarely does a deep-seated proctitis become troublesome.

There is a great divergence of opinion as to the average duration of gonococcal vaginitis treated with antiseptics. TeLinde found that four months was an average at the Johns Hopkins Clinic for cases so treated. We have found an average of four and a half months' duration in a series of thirty-five cases treated in the New Haven Hospital. A longer follow up might well have increased the length of our average figures. The Bellevue-Yorkville study<sup>7</sup> reports 241 cases under observation for from about five to sixteen months. Of 124 cases studied, forty-seven, or 37.9 per cent, were infected for from one to eleven years before admission to the clinic. The authors of this study conclude that three or four months of treatment with mercurochrome will render the vaginal smears of 70 per cent of such cases negative or "suspicious." We have seen cases of two and three years' duration and heard of one instance in which the infection lasted seven years.

In our cases the criterion for a diagnosis of gonorrheal vaginitis has been the finding in the vaginal smear of gram-negative diplococci morphologically resembling gonococci. In the limited number of our cases in which cultures or complement fixation tests were conducted, an extraordinarily high percentage of the diagnoses made by smears were confirmed. Dr. Alfred Cohn of the Department of Bacteriology at Yale University School of Medicine found that in twelve smears of positive cases ten gave positive cultures. In twenty-five smear-positive cases, complement fixation tests by Cohn and the Department of Health Laboratories, New York City, gave eighteen positive results, three doubtful and four negative.

Cases are reported in this paper as negative when no gonococci or pus cells were found on repeated smears. All such cases should be seen and smears should be examined for many months after an apparent cure has been effected.

6. Ruys, A. C., and Jens, P. A.: München. med. Wchnschr. 80: 846 (June 2) 1933.

7. Brunet, W. M.; Tolle, D. M.; Scudder, S. A., and Medcalf, A. R.: Report of a project of the Bellevue-Yorkville Health Demonstration of New York City, reprinted from Hospital Social Service Magazine, sup. 1, March 1933.

During the first part of our study the patients were under the direct care of Dr. Helen Owen.

Sixty-six patients treated with 800 international units daily of estrogenic substance<sup>8</sup> in ethylene glycol given hypodermically yielded some results but on the whole rather unsatisfactory ones.

TABLE 3.—Summary of Results\*

Case	Age	Duration Before Treatment	Total Dosage, International Units	Days Treatment Until Negative	Follow-Up	
					Time	Result
1	3½ yrs.	3 days	21,600	14	5 mos.	Apparently well
2	3 yrs.	1 wk.	37,200	28	.....	Recurred in 1½ mos.
3	6 yrs.	2 wks.	21,600	14	5 mos.	Apparently well
4	4 yrs.	1 wk.	23,480	10	5 mos.	Apparently well
5	4 yrs.	1 wk.	27,000	24	9 wks.	Apparently well
6	3 mos.	Acute?	24,600	21	.....	Recurred in 2 mos.
7	4 yrs.	2 wks.	25,200	19	4 wks.	Apparently well
8	4½ yrs.	4 days	27,600	25	4 mos.	Apparently well
9	6 yrs.	1 day	27,600	25	4 mos.	Apparently well
10	5 yrs.	Acute	19,200	17	4 wks.	Apparently well
11	9 yrs.	4 wks.	40,800	37	11 wks.	Apparently well but returned with 1 positive smear; no discharge; apparently well
12	7 yrs.	?	15,600	11	4 mos.	Apparently well
13	7 yrs.	1 wk.	30,600	37	7 wks.	Apparently well
14	10 yrs.	2 wks.	18,000	15	9 wks.	Apparently well
15	3 yrs.	3 days	16,200	9	13 wks.	Apparently well
16	4 yrs.	2 wks.	19,800	14	18 wks.	Apparently well
17	9 yrs.	2 wks.	47,400	30	9 wks.	Apparently well
18	3 yrs.	2 wks.	50,800	34	5 wks.	Apparently well
19	2 yrs.	Acute	23,200	23	7 wks.	Apparently well but returned with positive smear; no discharge
20	3 yrs.	3 days	25,200	8	9 wks.	Apparently well
21	4 yrs.	1 wk.	25,000	12	7 wks.	Apparently well
22	7 yrs.	1 wk.	38,000	24	5 wks.	Apparently well
23	2½ yrs.	2 days	40,000	26	4 wks.	Recurred; discharge and positive smears
24	2 yrs.	2 days	24,000	10	24 days	Apparently well
25	5 yrs.	1½ mos.	Still under treatment	16	10 days	Apparently well
26	8 yrs.	1 wk.	.....	48	3 days	Apparently well
27	5 yrs.	Acute?	Still under treatment	14	1 wk.	Apparently well
28	2 yrs.	1 day	Still under treatment	14	1 wk.	Apparently well
29	3 yrs.	2 days	Still under treatment	14	1 wk.	Apparently well
30	2 yrs.	1 wk.	Still under treatment	23	1 wk.	Apparently well
31	11 yrs.	5 mos.	Still under treatment	42	7 wks.	Apparently well but has positive urethritis
32	12 yrs.	Acute	.....	12 wks.	5 wks.	Apparently well
33	9 yrs.	5 wks.	45,800	12 wks.	7 wks.	Apparently well

\* Children with gonorrheal vaginitis treated by means of estrogenic suppositories, one inserted into the vagina each night. Some suppositories contained 600 international units of estrogenic substance. Those used more recently contained 1,000 international units.

A further follow up of the cases treated with estrogenic substance in suppository form, observed through the four-month interval since this paper was written, showed that all but five patients have remained well for periods ranging from four to nine months. Patient 26, who was considered as being probably still infected, proved to have a persistent urethritis which was in all likelihood responsible for a relapse after two months. Cases 16, 17, 22 and 28 recurred after from two and a half to four months. These have all cleared up promptly under a second course of estrogenic substance, as did the three recurrent cases reported in the text.

Eight more cases in which treatment has been completed since this report was compiled, became negative in an average of 19.7 days. Only one case in the forty-eight cases treated with the suppository form of administration has failed to show the response to administration of estrogenic substance.

With this dosage (800 international units daily) twenty-seven cases became negative after treatment varying from two to twenty-two weeks, apparently with response to estrogenic substance. Six cases remained

positive in spite of continuous treatment for from eighteen to thirty weeks, with no evidence of estrogenic reaction. Two of these patients were found to have an endocervicitis. Eight cases that recurred shortly after treatment was stopped were not considered to have been satisfactorily treated.

The remaining cases gave insufficient evidence from which to draw conclusions. Some became negative after very small doses of estrogenic substance and before any tissue reaction was observed; some in which treatment was interrupted while smears were still positive returned at a later date presenting negative smears. A few did not remain under observation after treatment was stopped. Many of the patients receiving only 800 international units of estrogenic substance by hypodermic daily showed only doubtful vaginal reactions. We have determined the presence or absence of response of vaginal mucosa to the different preparations and dosages used in this study by examining microscopic sections of minute biopsies.

Increasing the dosage of estrogenic substance in ethylene glycol yielded better results. Eight ward patients with gonorrheal vaginitis were given daily by hypodermic 2,400 international units in divided doses (table 2). Negative smears were obtained from this group in an average time of 24.2 days. They were followed thereafter for from two weeks to nine months. Three of these cases recurred, one in one month and two in two months. These cases were again treated until negative smears were obtained and have remained negative for from one to three months. No cases were treated with estrogenic substance in oil parenterally.

In the original paper<sup>1</sup> mention was made of the use of vaginal suppositories containing theelin. These were discarded at that time as not effective. It is probable that the amount of estrogenic substance contained in them was not sufficient to produce the desired vaginal reaction in a large percentage of the cases in which they were used.

Recently TeLinde and Brawner reported the use of vaginal suppositories containing 600 international units of estrogenic substance in cases of gonorrheal vaginitis. Their results were surprisingly and uniformly satisfactory. Twenty-two patients were treated and in all of them the infection disappeared, as evidenced by clinical observation and negative smears, in an average of from 17.8 to 29.4 days. They found that on an average 13.1 days was required to produce the initial characteristic response of the vaginal mucosa to estrogenic substance.

Of seventeen cases, five recurred but quickly yielded to a second course of treatment with estrogenic suppositories. Although little time had elapsed in some of their cases after apparent cure, all smears were negative when last examined.

Since hearing TeLinde's paper in June 1935, we have treated a series of thirty-three patients at Bellevue Hospital with estrogenic suppositories. At first suppositories of estrogenic substance containing 600 international units each were used. Recently this preparation was changed by the manufacturer to one containing 2,000 international units. One half of such a suppository containing 1,000 international units was inserted into the child's vagina each night before she went to bed. No vaginal washes or applications were used. The external genitalia were washed when necessary for cleanliness. The patients have been followed and observed for evidences of the estrogenic reaction and the development

8. The large amount of estrogenic substance (amniotin) required in all our work has been given to us most generously by E. R. Squibb & Sons.



of negative smears. Vaginal biopsies examined microscopically have shown that the estrogenic reaction of the vaginal mucosa has occurred regularly.

It is of course of the utmost importance to determine the presence or absence of the vaginal response to estrogenic substance in all cases, as without this tissue change no benefit can be expected. This was formerly done by securing minute biopsies and examining sections with the aid of the microscope. This method is time consuming and expensive. Vaginal smears showing extraordinary desquamation of epithelial cells are evidence that the estrogenic reaction has occurred. The inexperienced observer will, however, often be misled, particularly if the exfoliation is not great. The gross appearance of the vaginal mucosa and introitus is frequently helpful.

We wish now to stress the value of another simple practical test for the estral response which can be carried out easily in a few minutes. Long ago Döderlein<sup>9</sup> called attention to the presence of the bacillus named for him and considered its acid-forming properties as responsible for the acid reaction of the secretions of the adult female vagina. Zweifel later showed that it was the destruction of the superficial glycogen containing cells of the vaginal mucosa that produces much of the acidity. In the thin vaginal mucosa of the child but little glycogen is contained. On the other hand, the superficial cells of the adult vagina and, of more importance to us, of the vagina of the child adequately treated with estrogenic substance are loaded with glycogen. These as a result of bacterial or enzymatic action produce a markedly acid reaction as they break down. Soeken,<sup>10</sup> Cruickshank<sup>11</sup> and others have described the histologic changes that occur during puberty and ordinarily before the occurrence of the first menstrual period. They have also pointed out the dramatic and abrupt change to acidity in the reaction of the vaginal secretion which occurs at this time and that this in turn is accompanied by an equally rapid transformation of the vaginal flora.

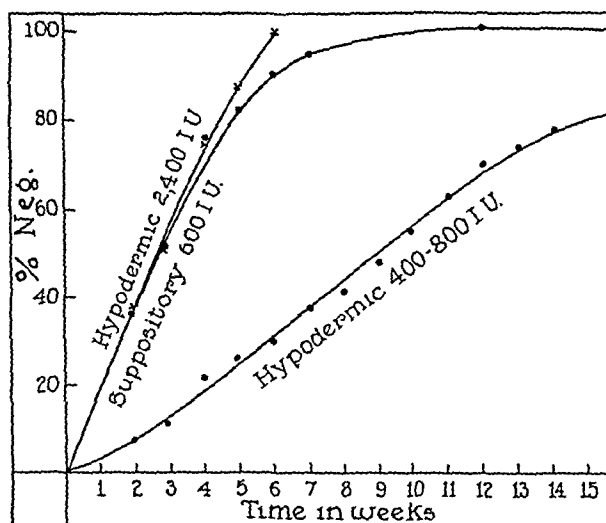
Hall and Lewis<sup>12</sup> treated immature monkeys hypodermically with estrogenic substance and found that the vaginal secretions, which are faintly alkaline ( $p_H$  7.5 to 8) in the normal animal, became suddenly strongly acid ( $p_H$  5.4 to 5.7) as soon as the vaginal response to estrogenic substance occurred. In normal children the reaction of the vaginal secretions is nearly neutral (usually between  $p_H$  6.8 and 8.4). We confirm Lewis and Weinstein's<sup>13</sup> observations which show that when the vaginal mucosa of children reacts to estrogenic substance the vaginal secretions change from near neutral to a well marked acidity ( $p_H$  4.8 to 6).

In vitro the gonococcus grows best in a faintly alkaline medium ( $p_H$  7.2 to 7.6). If this is rendered acid very gradually over a period of days or weeks these organisms will rarely adapt themselves to a medium as acid as  $p_H$  6 to 6.2. Usually the culture dies before this point is reached. Tests that we have carried out to determine the  $p_H$  of the vaginal secretions of children in our series before treatment have given  $p_H$  values between 6.8 and 7.4. With the appearance of the estrogenic reaction of the vaginal mucosa (checked by

biopsy and microscopic section), the vaginal secretions became acid ( $p_H$  4.5 to 6.2), nearly always giving readings below 6.

In the few cases in which this reaction did not occur, either as a result of neglect in the administration of the estrogenic substance or because of some unknown constitutional factor which prevented the usual vaginal response to estrogenic substance, the infection ordinarily continued. Nearly every case in which the  $p_H$  of the vaginal secretions dropped to below 6 recovered from the gonococcal infection. Consequently we believe this acid change of the vaginal secretion is the important curative factor produced by administration of estrogenic substance in gonococcal vaginitis of children.

It is a simple matter to determine the  $p_H$  reaction of the vaginal secretions. The vagina is irrigated with 1 or 2 cc. of neutral physiologic solution of sodium chloride adjusted to a  $p_H$  of 7.0. Colorimetric readings of the  $p_H$  of the washings are made with brom-thymol-blue, brom-cresol-purple or brom-cresol-green as indicators, depending on the degree of acidity present. The



Duration of treatment with estrogenic substance required to yield negative smears.

results are read by comparisons with a set of standards. If an acidity below 6.2 is found it may be taken as evidence that the desired change in the vaginal mucosa has been brought about. This is much simpler and less time consuming than the taking of biopsies. When  $p_H$  readings in our cases were below 6.0, biopsies invariably showed that the vaginal mucosa had reacted to estrogenic substance. If readings remained near or above 7.0, no change had occurred, as the treatment had been inadequate.

The use of suppositories of estrogenic substance, as suggested by TeLinde and Bawner, has enormous advantages in point of simplicity over any other form of treatment with which we are acquainted. The treatment is readily carried out at home by any intelligent adult and needs only a weekly visit to the physician or dispensary. It is not uncomfortable for the little patient, as contrasted with the usual local applications or with our own earlier method of treatment by the hypodermic route. It is also apparently much more efficacious and less apt to cause temporary enlargement of the breasts. The use of the suppositories every night should continue for at least two weeks after the discharge ceases and smears have become negative. None of our cases have shown any stimulation of mammary

9. Döderlein, Albert: *Das Scheidensekret*, Leipzig, 1892.

10. Soeken, Gertrude: *Ztschr. f. Kinderh.* 47: 27-37, 1929.

11. Cruickshank, R., and Sharman, A. *J. Obst. & Gynec. Brit. Emp.* 41: 369 (June) 1934.

12. Hall, Vincent, and Lewis, R. M. *Endocrinology* 20: 210 (March) 1936.

13. Lewis, R. M., and Weinstein, L., to be published

development and none have exhibited bleeding from the uterus. None of our cases have shown any evidence of harmful results from the treatment. The treatment with suppositories must be carried out regularly. Irregular or inadequate treatment is no better than no treatment at all.

It is generally recognized that long-standing cases of gonorrheal vaginitis yield to estrogenic therapy more easily than do the recently acquired florid cases. In our group of thirty-three consecutive cases treated with suppositories of estrogenic substance practically all (table 3) were of the latter class.

Of a total of thirty-three cases treated with estrogenic suppositories in the manner that we have just described, in thirty the smears were negative in an average of 20.7 days. Patients 32 and 33 continued to have slight discharge and gonococci, until eventually after twelve weeks they appeared well. Case 31 showed negative smears for three successive days but is in all likelihood still infected.

Of the thirty-three patients five have had recurrences. Three of these had a return of purulent discharge and gonococci. Two have had no further vaginal discharge but a return with gram-negative diplococci in their smears. These two cases are being kept under observation. Of the other three recurrent cases, two now show negative smears after seventeen and twenty-eight days of further treatment with suppositories. The other recurrent case was started on a second course of treatment seven days ago and will probably clear up rapidly.

Two of the patients who appeared to have recurrences had presumably acquired their initial infections from an actively infected member of the household. Apparently cured of vaginitis in the ward, they were of necessity returned to their homes, where in each case the parent continued to be a likely source of fresh infection. We have classified these cases as recurrences although they may well have been reinfections.

#### CONCLUSIONS

1. In treating gonorrheal vaginitis, estrogenic substance in ethylene glycol given hypodermically was relatively effective when used in large doses: 2,400 international units daily. Eight hundred international units daily proved disappointing.

2. The use of vaginal estrogenic suppositories (originally 600 international units and later 1,000) proved very effective.

3. Clinical improvement, cessation or great diminution of discharge is nearly always noted after from fourteen to eighteen days of treatment.

4. The administration of estrogenic substance changes the reaction of the vaginal secretions from neutral or alkaline to acid. This, we believe, is the major factor in eliminating the gonococcic infection.

5. The acidity of the vaginal secretions is easily measured and provides a sure guide by which one can determine whether or not dosage is adequate.

6. Of thirty-three consecutive cases of gonorrheal vaginitis in children treated with estrogenic suppositories, thirty yielded negative smears in an average of 20.7 days. Two required twelve weeks of treatment. Five cases are listed as recurrences.

7. No ill effects were encountered. We believe that this method of treatment is safe and harmless.

8. We consider the use of vaginal estrogenic suppositories the most effective method known for the treatment of gonorrheal vaginitis in children.

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## THE FEEDING OF MODIFIED GASTRIC JUICE IN PERNICIOUS ANEMIA

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AND

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In a recent issue of *THE JOURNAL* Greenspon<sup>1</sup> offered an explanation of the rôle played by the gastric secretions in hematopoiesis that differs essentially from Castle's well known theory of the interaction of intrinsic and extrinsic factors. By feeding a pernicious anemia patient normal gastric juice so treated as to inhibit the action of pepsin, Greenspon states that a degree of reticulocytosis was produced which is comparable to the effect of liver therapy in pernicious anemia. It is obvious that such an experiment might easily be vitiated by the presence of "extrinsic factor" either in the stomach of the patient or in the gastric juice of the donor.

We have repeated Greenspon's experiment, adhering strictly to his technic, in five typical untreated cases of pernicious anemia. Fifteen normally healthy medical students have acted as donors of gastric juice, which in every instance has been tested for the presence of free hydrochloric acid. One donor with achlorhydria was rejected. Histamine (0.1 mg. per kilogram of body weight) alone was used to stimulate the flow of juice, and if there was evidence of food contamination the specimen was discarded.

CASE 1.—A man, aged 39, a farmer, gave a typical history of pernicious anemia of two years' duration. He had not been treated. The usual objective signs of pernicious anemia without involvement of the spinal cord were observed.

Examination of the blood on admission revealed hemoglobin 4.4 Gm. (28 per cent), erythrocytes 1,140,000, color index 1.25, mean corpuscular volume 122 cubic microns, leukocytes 2,150, reticulocytes 0.5 per cent and plasma bilirubin 0.5 mg. per hundred cubic centimeters.

Gastric analysis revealed no free hydrochloric acid after histamine (0.1 mg. per kilogram of body weight) subcutaneously.

After an observation period of four days during which the reticulocytes did not rise above 1 per cent, neutralized (tenth normal sodium hydroxide) and chilled gastric juice was fed by tube for nine days in doses of 340, 250, 250, 200, 260, 230, 200, 290 and 350 cc., a total of 2,370 cc. During the nine days of the gastric juice feedings and for four days thereafter there was no rise in the reticulocytes or erythrocytes, and the patient felt worse in every way. The appetite decreased.

Three intramuscular injections of 10 cc. of solution liver extract concentrated-Lilly (each cubic centimeter derived from 33 Gm. of liver) were given on successive days, and on the fourth day of liver treatment the reticulocytes rose to 20 per cent and increased steadily to 40 per cent on the sixth day after the first injection. The erythrocytes increased to 1,500,000. The mean corpuscular volume fell from 122 cubic microns on admission to 89.1 cubic microns nine days after the administration of gastric juice was begun. On the sixth day of liver treatment the mean corpuscular volume had increased to 123 cubic microns.

CASE 2.—A man, aged 58, a farmer, presented the classic history and objective signs of pernicious anemia of eight months' duration. He had not been treated.

Examination of the blood on admission revealed hemoglobin 5.4 Gm. (36 per cent), erythrocytes 1,170,000, color index 1.13, mean corpuscular volume 110, leukocytes 4,150, reticulocytes 0.4 per cent and plasma bilirubin 1 mg. per hundred cubic centimeters.

From the Department of Medicine, Duke University School of Medicine.

1. Greenspon, E. A.: The Nature of the Antipernicious Anemia Principle in Stomach: I. Method to Improve Stomach Preparations. *J. A. M. A.* 106: 266 (Jan. 25) 1936.

Gastric analysis revealed no free hydrochloric acid after histamine (0.1 mg. per kilogram of body weight) subcutaneously.

After five days of observation during which the reticulocytes did not rise above 0.2 per cent, seven daily feedings of neutralized chilled gastric juice by tube were given in doses of 260, 280, 250, 175, 260, 260 and 270 cc., a total of 1,750 cc. Eight days after the first feeding of gastric juice the reticulocytes rose to 1.8 per cent and during the next six days counts of 2, 3, 3, 2.6, 3 and 1 per cent were made.

Liver therapy was begun seven days after the last gastric juice feedings. Ten cubic centimeters of solution liver extract concentrated-Lilly was given intramuscularly on two successive days. On the fourth day of liver therapy the reticulocytes had risen from 1 to 7.8 per cent and during the next five days rose to 39 per cent. The erythrocytes during the same time rose to 2,250,000. During the course of gastric juice feedings the mean corpuscular volume fell from 110 cubic microns to 71 cubic microns. On the sixth day of liver feeding the mean corpuscular volume had risen to 103 cubic microns.

CASE 3.—A man, aged 46, a farmer, had pernicious anemia of six years' duration; there was subacute combined degeneration of the spinal cord. He had received no liver therapy.

Examination of the blood on admission revealed hemoglobin 6.6 Gm., erythrocytes 1,570,000, color index 1.3, mean corpuscular volume 123, leukocytes 2,200, reticulocytes 0.2 per cent and plasma bilirubin 1 per cent.

Gastric analysis revealed no free hydrochloric acid after the injection of histamine (0.1 mg. per kilogram of body weight) subcutaneously.

After six days' observation, during which the reticulocytes never rose above 0.6 per cent, seven feedings of neutralized chilled gastric juice were given by tube in doses of 250, 250, 250, 180, 305, 250 and 300 cc., a total of 1,785 cc. During the period of the gastric juice feedings and for three days thereafter the reticulocytes did not rise above 1 per cent.

Acting on a suggestion which Dr. Castle had made in a letter to Dr. Greenspon, the patient was placed on the following dietary restrictions three days prior to the feeding of gastric juice and during the seven days of gastric juice feedings. The purpose of the diet was to exclude "extrinsic factors" as far as possible. "No meat, eggs, chicken, vegetables or fruit. Milk allowed in cooking and in tea or coffee. Diet to consist of white bread, rice, butter, macaroni, small amounts of ice cream, tea and coffee"; (quoted from a letter from Dr. Greenspon). On this diet, combined with gastric juice feedings, the patient grew steadily worse.

On the fourth day after the last feeding of gastric juice, liver therapy was given as follows: first day, 10 cc. of solution liver extract concentrated-Lilly; second day, 20 cc. of Parke, Davis & Co.'s liver extract for intravenous use (derived from 100 Gm. of liver); third and fourth days, 10 cc. of solution liver extract concentrated-Lilly. On the fourth day of liver therapy the reticulocytes were 10 per cent and rose to 42 per cent, as a maximum, on the fifth day.

During the course of gastric juice feedings the mean corpuscular volume fell from 123 cubic microns to 92 cubic microns and then rose to 119 cubic microns on the sixth day of liver therapy.

Two other patients with untreated pernicious anemia were given neutralized gastric juice, in exactly the manner detailed, with totally negative results. For the sake of brevity their detailed histories are omitted.

Sternal bone marrow studies in all five cases were done at frequent intervals during the periods of gastric juice feedings, and in no instance was the usual megaloblastic picture changed. The megaloblast-normoblast ratio remained unaltered throughout the experiments and was identical with that constantly seen in untreated pernicious anemia.

#### CONCLUSION

Feeding pernicious anemia patients the gastric juice of normal individuals, modified according to the technic of Greenspon, produces no subjective or objective improvement in the patient's condition. No evidence of increased erythropoiesis was observed, either in bone marrow or in circulating blood.

## Clinical Notes, Suggestions and New Instruments

### MULTIPLE SYMMETRICAL LIPOMATOSIS

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Lipomas may occur anywhere within the body and have been found in the cranial cavity, the mediastinum, the uterus and the marrow cavity of the bones. Because of their wide distribution they have been classified as subcutaneous, intermuscular and visceral. The majority are located under the skin and occur most frequently on the trunk, thighs and arms. The face, scalp, sternal region, hands and lower legs are infrequent sites.

Pack and LeFevre,<sup>1</sup> in a study of 19,129 tumor cases, of which 2,564 were benign growths, found that lipomas included

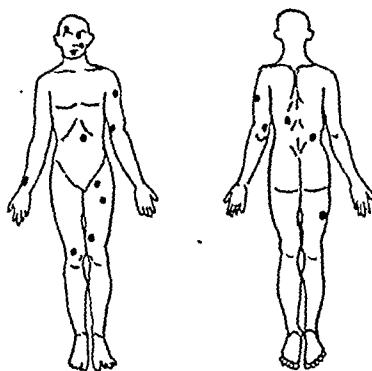


Fig. 1.—Multiple symmetrical lipomatosis: Distribution of the lipomas on the son, showing freedom of the hands and lower part of the legs and the presence of four tumors above the neck.

4.3 per cent of all benign tumors. Adair,<sup>2</sup> reporting the regional distribution of 352 lipomas in 134 patients, had a frequency of from 4 to 5 per cent of all benign tumors. Of these, nine cases (6.7 per cent) were multiple lipomas. Adair included a case presenting 160 distinct tumors. Of the 352 lipomas, only two

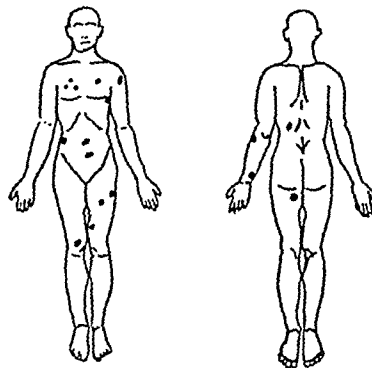


Fig. 2.—Multiple symmetrical lipomatosis: Distribution of the lipomas on the daughter, showing freedom of the hands, lower part of the legs and the head.

tumors were observed above the neck, two below the knees and two on the hands. Of the 134 patients, 101 were between the ages of 30 and 55; 42 per cent were in the decennium of 40-50 years. Females constituted approximately 75 per cent of the cases.

Adair differentiates between multiple lipomas and "congenital diffuse lipomatosis." The latter is confined to one or two limbs

From the Clinic of Dr. E. C. Foote, M.D., Hastings, Neb.  
1. Pack, G. T., and LeFevre, R. G.: The Age and Sex Distribution and Incidence of Neoplastic Disease at the Memorial Hospital, *J. Cancer Research* 14: 167-294 (June) 1930.  
2. Adair, F. E.; Pack, G. T., and Farrior, J. H.: Lipomas, *Am. J. Cancer* 16: 1104-1120 (Sept.) 1930.

and is usually associated with corresponding enlargement of muscles and bones of the same extremity. The multiple lipomas, Adair believes, are neurolipomas. They are not congenital but develop during adolescence and later life. Their frequent symmetrical distribution commonly confuses them with multiple neurofibromatosis. Adair presents a number of clinical similarities but, in suggesting a neurogenic origin for multiple lipomas, admits a lack of histologic evidence.

The etiology of symmetrical lipomatosis is obscure. Ewing<sup>3</sup> says: "It has not been possible to establish for lipomas such a relation to peripheral nerves as exists with fibromas." Adair has called attention to a number of writers who have linked the lipomas with neuropathies. Trauma and endocrine imbalance, particularly of the thyroid and pituitary, may be provocative agencies. Again, Ewing says that lipomas (multiple) "seem more closely connected with the forms of diffuse or regional overgrowths of fat tissues, which bear the same relation to lipomas as diffuse fibromatosis to fibromas." He believes that endocrine imbalance of the thyroid and pituitary may be an important factor. "A congenital tissue predisposition seems to be an essential factor in the origin of most lipomas." Moreira da Fonseca<sup>4</sup> qualifies multiple symmetrical lipomatosis as an "endocrinosympathetic syndrome," with emphasis on the pituitary.

A heredofamilial tendency in multiple lipomas is illustrated by the reported cases of Adair, Bonnefous and Valdiguié,<sup>5</sup> Cannon,<sup>6</sup> Esquier<sup>7</sup> and Leven.<sup>8</sup> Adair has one report of the condition extending through three generations.

#### REPORT OF CASES

The following three cases of multiple symmetrical lipomatosis were observed in a mother, a son and a daughter:

CASE 1.—The mother was a white woman, aged 63. At the age of 35 her menses suddenly ceased and in the following five years she began to note the appearance of small, soft tumors over her body. A few were noted on the lower part of the legs and many on the scalp. Most of the tumors were from 0.5 to 1 cm. in diameter and were frequently associated with pigmented nevi. The tumors were not painful or attached to the skin. The total number of tumors was too great for the patient to diagram accurately. Her son and daughter presented similar tumors the location of which is shown in the illustrations.

CASE 2.—The son, aged 34, at the age of 14 years was struck on the left cheek with a baseball, and three years later he noted a soft tumor over the area and a second soft tumor under the left upper eyelid. Coincidentally a tumor appeared in the roof of the mouth. The oral tumor grew slowly but when the patient was 34 it had acquired the size of a hen's egg (3 cm. in diameter). The necessity for removal brought these three cases to the attention of the physician.

CASE 3.—The daughter, aged 36, first noted the tumors at the age of 26. Four years before admission she had one of the large abdominal tumors (5 cm. in diameter) removed. Biopsy revealed a lipoma. At the present time she gave no history of endocrine imbalance.

#### COMMENT

The son and daughter each presented seventeen lipomas and the distribution in the two cases was similar (figs. 1 and 2). No tumors were noted on the lower legs or on the hands. However, the son presented four tumors of the head and the mother presented numerous soft tumors of the scalp. The mother also showed a number of lipomas of the lower legs. A suggested endocrine imbalance is noted in the cessation of menses in the mother prior to the appearance of the tumors.

Histologic examination of the oral tumor from the son revealed a preponderance of fat cells of a mature type. However, the cytology was characterized by interlacing bundles of

mature fibrous tissue. Although there was no histologic evidence of neurogenic origin, the distribution of the tumors in the son and daughter suggests a possible configuration following the peripheral nerve routes. A second tumor removed from the son showed a simple mature lipoma.

#### SUMMARY

Three cases of multiple symmetrical lipomatosis in a mother, son and daughter were observed. The tumors were noted in uncommon sites, namely, the head and lower part of the legs, on the mother and son. The distribution of the tumors on the son and daughter (seventeen in each case) was similar. Possible endocrine disturbance may have been an etiologic factor in the mother.

## Special Article

### DIPHTHERIA MORTALITY IN LARGE CITIES OF THE UNITED STATES IN 1935

#### THIRTEENTH ANNUAL REPORT

This report concerns the ninety-three cities dealt with in the recent article on typhoid;<sup>1</sup> the rates are calculated on the basis of the population figures used in that article. The number of diphtheria deaths in each city has been reported to us by the respective health departments.<sup>2</sup> Particulars as to the years that are included in the five year averages, annotated as "incomplete data" are given in footnotes to tables 1-8 in our previous reports through 1931 and are itemized at the beginning of the article for 1932.

TABLE 1.—Death Rates of Fourteen Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1935	1934	1930	1925-	1920-	1915-	1910-	1905-	1900-	1895-	1890-
	1935	1934	1934	1929	1924	1919	1914	1909	1904	1899	1894
Bridgeport.....	0.0	0.7	1.0	11.8	19.6	23.4	23.3	26.8	34.2	63.9	79.3
Cambridge.....	0.0	0.0	1.2	3.2	8.9	12.9	23.8	25.3	46.7	71.9	69.0
Lynn.....	0.0	4.9	4.7	13.5	17.0	17.8	17.2	21.7	38.0	41.0	53.0
New Bedford.....	0.0	0.0	4.8	10.9	16.5	17.0	20.9	22.6	25.1	53.6	70.0
New Haven.....	0.0	0.0	0.5	1.6	7.1	14.2	14.9	22.7	15.6	54.8	74.5
Springfield.....	0.0	0.0	2.1	10.3	15.4	24.9	19.1	31.3	29.6	51.3	68.2
Waterbury.....	0.0	1.0	2.4	2.6	17.9	23.0	29.6	.....	.....	.....	.....
Worcester.....	0.5	1.0	2.9	5.6	15.5	14.1	21.3	32.2	16.5	50.3	47.6
Somerville.....	0.9	6.6	6.0	8.7	19.7	20.2	21.4	21.5	40.5	67.8	37.8
Providence.....	1.2	0.4	5.0	9.5	15.8	29.3	26.8	30.7	41.2	53.5	55.3
Boston.....	1.3	1.1	3.2	8.3	20.2	26.3	20.0	26.2	53.7	83.9	112.2
Fall River.....	1.7	1.7	3.9	12.0	23.5	23.6	24.0	34.4	50.1	43.8	46.9
Lowell.....	4.0	15.0	9.4	10.6	16.7	23.5	20.6	31.0	59.3	44.3	36.4
Hartford.....	4.1	0.6	1.1	5.3	11.9	13.8	25.3	28.1	38.8	47.8	120.9

theria, a truly astonishing record. With the exception of Lowell, in which diphtheria mortality has been relatively high in recent years, and Hartford, where a considerable number of the reported diphtheria deaths occurred in nonresidents, no diphtheria death rate reached as high as 20. The registration of only

TABLE 2—Death Rates of Eighteen Cities in Middle Atlantic States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924
Albany	0.0	0.8	2.9	7.5	12.5	10.4	20.0	31.6	26.9			
Erie	0.0	2.3	0.5	5.8	16.8	1.1	17.7	2.1	42.0	23.1		
Reading	0.0	0.4	3.8	7.0	21.1	16.9	3.7	29.2	70.1	12.0	94.1	
Rochester	0.0	0.0	0.7	7.3	16.9	12.7	22.1	32.4	32.0	4.9	96.6	
Seranton	0.0	1.4	1.0	11.7	17.3	22.1	27.4			77.8	48.6	
Syracuse	0.0	0.0	0.4	2.0	22.9	17.9	16.6	17.4	17.7	31.1	3.4	
Utica	0.0	0.0	1.2	13.4								
Yonkers	0.0	0.7	0.6	10.4	17.0	17.7	2.0					
Newark	0.2	0.2	0.0	14.5	9.7	14.6	2.0	38.1	46.7	19.1	110.4	
New York	0.9	1.4	2.2	10.7	14.0	21.8	28.0	40.0	58.0	3.8	134.4	
Buffalo	1.0	1.0	4.8	9.1	24.0	2.3	27.0	18.4	24.8	33.5	60.1	
Philadelphia	1.0	1.1	1.3	11.8	16.7	2.0	24.6	34.1	50.0	100.6	110.4	
Paterson	1.4	4.3	6.2	9.1	18.1	13.1	16.1	2.1	32.9	111.8	14.4	
Pittsburgh	1.5	5.4	5.0	11.1	20.1	2.3	23.1	20.4	36.9	32.9	86.4	
Elizabeth	1.7	0.0	4.5	13.2	19.2	19.9	14.8	31.7	42.4	60.1	70.3	
Trenton	2.4	0.8	2.7	4.4	7.3	8.8	12.3	17.8	23.6	12.7	89.7	
Tenney City	4.1	3.4	6.0	11.1	18.4	21.0	22.2	32.6	37.9	83.4	108.6	
Camden	5.0	5.0	7.7	21.9	20.3	2.2	28.8	48.9	32.6	93.8	104.0	

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Diphtheria deaths from Chapin's Municipal Sanitation

# Incomplete data

† Diphtheria data for Seranton furnished by Pennsylvania Department of Health, Harrisburg

TABLE 3—Death Rates of Nine Cities in South Atlantic States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924
Baltimore	0.7	0.8	1.7	7.6	11.4	13.5	14.2	16.1	35.0	68.1	70.0	
Richmond	1.1	1.6	3.6	6.9	9.8	0.8	7.0	9.8	24.4	17.6	59.7	
Jacksonville	2.2	7.2	4.0	6.0								
Norfolk	2.0	2.0	4.6	4.1	4.1	6.7	17.0					
Wilmington	0.7	1.9	5.0	10.9	11.6	1.0	18.0	27.8	40.9	84.9	8.8	
Washington	0.8	3.2	3.9	7.1	10.0	11.9	6.9	11.2	23.5	10.9	77.9	
Miami	6.5	4.6	0.8	5.4								
Tampa	6.6	2.8	4.8	4.6	5.2	1.0						
Atlanta	6.8	7.5	5.7	7.0	1.3	10.1	12.5	14.2	11.1	10.5	8.8	

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Rate computed from population as of April 1, 1930 as no estimate for July 1, 1932, was made by the Census Bureau

# Incomplete data

twenty-eight deaths from diphtheria in 1935 in the whole New England group (population 2,624,805) is remarkable (table 13). New Haven has easily borne off the palm since 1930 among the New England cities. It is tempting to attribute this freedom from the disease in New Haven to the high proportion of immunized children (65 per cent of children of preschool age and 80 per cent of school children). The city of Lowell, although still with more diphtheria than the average, shows marked improvement over 1934. Boston again has a very low rate for a city of its size.

The eighteen cities of the Middle Atlantic states (table 2) still rank as the best geographic group in the country as regards diphtheria mortality (table 13). Only three cities had a rate higher than 20 and eight of the eighteen had no diphtheria deaths, Syracuse for the third consecutive year. The Middle Atlantic cities are running a close race with the New England cities, the diphtheria rate for the group for 1935 (1.00) being only slightly lower than the New England group aver-

age (1.07): this was also the case in 1934 (Middle Atlantic 1.63, New England 1.68). Utica is said to have had only one case of diphtheria in 1935. 61 per cent of children under 5 years of age in that city have been given the immunizing treatment. Here also it is impossible to avoid the conclusion that the very large extent to which diphtheria immunization is practiced in the cities in this region is responsible for the marvelously low, and still declining, diphtheria death roll. New York records the lowest rate in its history (0.9) and Philadelphia, with a rate of 1.0, is on the same level. It is noteworthy that, of the nineteen cities in the United States reporting no diphtheria deaths in 1935 (table 10), fifteen are in the two geographic divisions just discussed (New England and Middle Atlantic).

The nine cities of the South Atlantic group (table 3) did not, on the whole, do as well in 1935 as in 1934, Wilmington, Washington, Miami and Tampa showing an increase in diphtheria mortality. Jacksonville alone in this group shows marked improvement. Baltimore has an exceptional record in this division. For a period

TABLE 4—Death Rates of Eighteen Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924
Evansville	0.0	3.8	3.2	3.7	13.9	14.9	16.1	21.2	1.8	18.1	19.7	
Grand Rapids	0.6	0.0	0.3	2.0	19.6	1.5	20.0	25.6	17.2	32.4	99.2	
Youngstown	0.6	0.6	1.3	10.5	18.7	11.9	40.1	3.5	23.0	17.6	28.4	
Detroit	0.7	0.7	4.8	19.7	24.0	32.2	33.3	22.6	38.0	12.9	1.2	
Milwaukee	0.7	1.1	2.0	8.5	11.4	19.8	27.8	26.4	22.7	17.1	116.2	
Toledo	0.7	2.0	2.8	7.2	22.4	14.1	24.4	20.4	36.8	24.6	89.1	
Canton	0.9	0.0	1.7	2.9	17.5	1.0	1.0					
Cleveland	2.0	3.0	2.5	15.3	14.7	20.0	24.6	20.8	42.6	4.0	97.7	
Chicago	2.4	1.2	4.3	11.7	17.5	31.2	27.9	27.0	3.9	69.7	117.0	
South Bend	2.7	0.0	1.3									
Columbus	3.3	4.0	3.2	4.6	8.5	7.6	12.1	10.0	11.6	25.5	56.9	
Akron	4.1	5.2	2.7	4.9	10.4	13.9	27.8	21.8				
Cincinnati	4.1	4.4	3.2	5.2	10.6	13.2	13.9	17.0	17.1	7.7	10.7	
Indianapolis	4.6	3.8	3.1	6.6	11.7	11.4	13.5	13.3	17.9	36.4	97.4	
Flint	6.0	2.4	2.7	4.5	20.9	2.5	12.7	11.0	16.8	6.9	69.2	
Fort Wayne	6.7	2.5	3.3	5.1	13.1	6.3						
Detroit	7.3	3.4	3.7	4.6	9.4	9.1	22.1	13.1	17.2	27.4	82.9	
Peoria	12.7	2.7	3.3	4.9	7.4	10.8	10.6	10.4	14.0	14.6	68.0	

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Diphtheria deaths from Chapin's Municipal Sanitation

# Incomplete data

TABLE 5—Death Rates of Six Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924
Memphis	2.7	2.3	6.0	5.8	9.5	11.2	11.9	13.4	6.9	10.0	28.5	
Birmingham	2.9	2.9	4.2	5.4	5.3	7.2	8.1	6.2	17.4	11.0	26.1	
Chattanooga	4.0	9.7	6.8	5.9	8.7	8.9						
Louisville	4.7	11.3	6.3	4.6	10.4	9.7	9.0					
Nashville	5.4	8.7	8.2	11.8	8.0	8.9	7.3	10.1	1.9	70.1	2.4	
Knoxville	1.0	10.3	9.6	6.3	11.2							

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Diphtheria deaths from Chapin's Municipal Sanitation

# Incomplete data

of a year and sixteen days (Sept. 26, 1934, to Oct. 13, 1935) there was not a single resident diphtheria death. Here also the campaign for diphtheria prevention by immunization has been carried on actively, apparently with a high degree of success. What is the matter with the other cities along the South Atlantic seaboard? One would expect Washington to have as low a rate as

Baltimore, but the average diphtheria mortality for the last two years has been nearly ten times as great. Cities like Miami or Tampa, with a "good climate," ought certainly to bring their diphtheria rates down to a level with those of the cities in "bleak" New England and central New York.

The cities in the East North Central states (table 4) had a relatively poor diphtheria year, the divisional

TABLE 6.—*Death Rates of Nine Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population*

	1930-1935	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
	1935	1934	1933	1932	1931	1930	1929	1928	1927
Minneapolis.....	0.6	1.0	1.7	11.9	13.4	19.9	28.3	24.4	34.0
St. Paul.....	0.7†	0.7	1.1	5.2	17.5	20.7	31.4	31.1	27.9
Duluth.....	1.0	0.0	0.4	2.0	6.0	10.2	8.8	38.2	29.1
Kansas City, Mo.....	2.2	2.2	3.2	4.7	14.4	22.8	15.7#	.....	.....
Kansas City, Kan.....	2.4	4.9	3.7	4.6	9.8	23.1	12.4#	.....	.....
Wichita.....	2.5	2.5	4.6	4.2	.....	.....	.....	.....	.....
St. Louis.....	2.9	4.6	4.3	10.3	16.1	24.4	23.7	19.4	43.3
Omaha.....	3.2	2.7	4.7	6.4	22.9	35.8	15.8	24.5	20.5
Des Moines.....	4.8	4.8	4.3	5.2	15.1	15.1	23.8#	.....	.....

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Incomplete data.

TABLE 7.—*Death Rates of Eight Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population*

	1930-1935	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
	1935	1934	1933	1932	1931	1930	1929	1928	1927
Oklahoma City..	2.5	4.5	5.7	10.9	.....	.....	.....	.....	.....
Tulsa.....	3.4	3.4	6.8	12.5	8.3#	.....	.....	.....	.....
El Paso.....	3.8	10.4	8.0	7.3	20.0	17.6	29.2	.....	.....
Houston.....	4.7	6.3	5.6	8.2	6.4	6.1	7.8	10.5	4.2#
New Orleans.....	5.5†	6.8	5.5	8.5	6.5	11.6	19.6	10.2	11.5
Dallas.....	6.5	6.5	9.7	9.8	8.3	7.4	6.9	8.1	16.9
Fort Worth.....	7.1	3.5	7.2	10.8	1.7#	2.6#	2.6	2.8	5.4
San Antonio.....	9.4	2.0	5.6	10.3	7.7	8.7	6.7	7.6	17.1

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Incomplete data.

TABLE 8.—*Death Rates of Eleven Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand of Population*

	1930-1935	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
	1935	1934	1933	1932	1931	1930	1929	1928	1927
Portland.....	0.0	0.6	1.3	6.4	11.3	6.0	12.3	12.2	.....
Seattle.....	0.0	0.0	0.4	1.4	6.6	5.5	5.2	12.5	13.4#
Tacoma.....	0.0	0.9	3.9	9.3	12.4	7.7#	.....	.....	.....
San Francisco.....	0.6	0.1	1.2	4.6	23.0	17.0	9.2	14.4	44.2
Salt Lake City..	1.4†	0.0	0.3	10.1	12.5	14.5	15.1	34.2	46.0
Spokane.....	1.7	0.0	0.7	7.5	11.3	4.2	7.6	25.8	59.5†
Long Beach.....	1.9†	0.0	0.8	2.6	10.4#	.....	.....	.....	.....
San Diego.....	1.9	1.9	2.9	6.6	12.2	10.5	8.0	5.8	2.4
Los Angeles.....	2.8	3.9	4.8	7.0	14.4	7.1	7.5	15.3	25.4
Denver.....	4.5	4.4	3.9	5.9	23.2	6.7	10.2	20.8	29.6
Oakland.....	5.7†	2.7	2.0	7.4	18.8	8.1	10.3	16.1	29.1

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Diphtheria deaths from Chapin's Municipal Sanitation.

# Incomplete data.

group rate rising from 1.89 in 1934 to 2.45 in 1935, an increase which suggests that renewed efforts in some communities should be made to bring about a general inoculation of children. Cincinnati is said to have had a high proportion of nonresident deaths (six to be credited to Kentucky and one each to Indiana and Ohio). The Peoria death rate from diphtheria was very high in the first six months of the year and it is stated that the improvement observed in the second six months was due to the general application of immunizing methods. It should not, however, be necessary

to wait until a considerable number of children are attacked before general immunization is undertaken. The results of preventive inoculation are now so definite that there seems no longer any excuse for continued high diphtheria mortality in either Northern or Southern cities.

The East South Central cities (table 5) in 1935 show a marked group improvement (table 13) over 1934 in diphtheria mortality. This is particularly marked in Louisville, Chattanooga and Nashville. Knoxville and Memphis have not done so well. Knoxville, as will be seen in table 5, shows an increase in the quinquennial period 1930-1934 as compared with 1925-1929, and, if 1934 and 1935 are representative, there seems likely to be another increase for the current five year period. It appears in table 9 that Knoxville had the highest diphtheria rate in the United States for 1935. Even allowing for considerable diphtheria in the surrounding

TABLE 9.—*Ten Cities with Highest Diphtheria Rates for 1935*

Knoxville.....	13.6	Atlanta.....	6.8
Peoria.....	12.7	Fort Wayne.....	6.7
San Antonio.....	9.4	Tampa.....	6.6
Dayton.....	7.3	Dallas.....	6.5
Fort Worth.....	7.1	Miami.....	6.5

TABLE 10.—*Nineteen Cities with No Diphtheria Deaths in 1935*

Albany.....	Lynn.....	Rochester.....	Tacoma.....
Bridgeport.....	New Bedford.....	Scranton.....	Utica.....
Cambridge.....	New Haven.....	Seattle.....	Waterbury.....
Erie.....	Portland.....	Springfield.....	Yonkers.....
Evansville.....	Reading.....	Syracuse.....	

TABLE 11.—*Number of Cities with Various Diphtheria Death Rates*

	No. of Cities	40 and Over	20 and Over	10 and Over	5 and Over	Under 5	0.0
1890-1894	64	52	60	61	62	2	0
1895-1899	66	34	33	63	65	1	0
1900-1904	68	22	46	64	66	2	0
1905-1909	72	3	43	66	71	1	0
1910-1914	79	1	36	63	78	1	0
1915-1919	84	0	25	62	81	3	0
1920-1924	88	0	14	65	86	2	0
1925-1929	92	0	1	22	67	25	0
1930-1934	93	0	0	0	24	69	0
1934.....	93	0	0	4	17	76	15
1935.....	93	0	0	2	17	76	19

country, the rate is still far too high for any American city in view of our present knowledge of methods of combating this infection.

The death roll in the West North Central division (table 6) in 1935 shows some improvement over 1934; this is particularly marked in the case of St. Louis and Kansas City, Kansas. The St. Louis rate appears to be the lowest ever recorded by that municipality. This is true also for Minneapolis and St. Paul, with the relatively low rates of 0.6 and 0.7, respectively. Duluth seems to have been remarkably free from diphtheria for a number of years and is likely to hold its place in the present decade as the leader in the West North Central group; the disease is said to have practically disappeared from that city.

The West South Central states (table 13) remain in almost exactly the same position as in 1934, a slight increase from 5.48 to 5.58 being indicated. While Oklahoma City, El Paso, Houston and New Orleans (table 7) show a noteworthy diminution in diphtheria mortality, the decrease in El Paso being particularly



gratifying, Fort Worth and San Antonio are backsliders. The residents of these Southwestern cities may well ask themselves why they should lose five times as many of their children from diphtheria as residents in the New England and Middle Atlantic states.

The cities in the Mountain and Pacific states (table 8) experienced higher diphtheria mortality in 1935 than in 1934, the increase in Oakland being particularly striking. San Francisco had a good record, although not quite so amazing as in 1934.

TABLE 12—Total Diphtheria Death Rates for Eighty-Eight Cities, 1923-1935\*

	Population	Diphtheria Deaths	Diphtheria Death Rate per 100,000 Population
1923	31,060,848	4,678†	13.13
1924	31,722,841	3,499	10.84
1925	32,384,834	3,133	9.67
1926	33,046,827	3,106	9.40
1927	33,708,820	3,493	10.36
1928	34,370,813	3,176	9.24
1929	35,032,806	2,738	7.82
1930	35,694,802	1,827	5.12
1931	36,356,812	1,346	3.74
1932	37,018,812	1,191	3.21
1933	37,684,812	861	2.32
1934	38,346,812	821	2.23†
1935	39,008,812	764	2.08†

\* The five following cities are omitted from this summary because data for the full period are not available: Jacksonville, Miami, Oklahoma City, South Bend and Utica.

† Data for Fort Worth lacking.

‡ The rate for the ninety-three cities in 1935 is 2.09 (population 37,437,812, diphtheria deaths 782). The corresponding rate for 1934 was 2.26 and the average for 1930-1934 was 3.34.

As appears in table 11, the number of cities with diphtheria death rates over 10 decreased from four in 1934 to two in 1935 and those with no diphtheria deaths increased from fifteen to nineteen. For the eighty-eight cities in our tables (table 12), the number of diphtheria deaths reported in 1935 was 764 as compared with 821 in 1934 and 3,133 in 1925, ten years ago. The rate for the whole population was probably definitely

TABLE 13—Total Diphtheria Death Rates per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions

	(1933) Population	Diphtheria Deaths		Diphtheria Death Rates	
		1935	1934	1935	1934
New England	2,624,895	28	44	1.07	1.68
Middle Atlantic	12,952,900	129	211	1.00	1.63
South Atlantic	2,367,307	80	70	3.38	2.96
East North Central	9,643,100	236	182	2.45	1.89
West North Central	1,242,600	59	87	4.75	7.00
West South Central	2,704,300	59	76	2.18	2.81
Mountain and Pacific	1,934,800	108	106	5.58	5.48
	1,908,400	81	109	2.09	1.74

\* Lacks data for 1925 for Jacksonville and Miami.

† Lacks data for South Bend.

‡ Lacks data for Oklahoma City for 1925 and 1926.

lower in 1935 than in 1934, but, since population estimates at the present time are tentative, the actual figures given in table 12 are of course only approximations.

The striking feature in the 1935 diphtheria record appears to be that wherever preventive inoculation against diphtheria is practiced consistently diphtheria deaths well-nigh cease to occur, and in some communities diphtheria morbidity is also reduced to an insignificant figure. It is to be hoped that all communities will soon come to realize what can be done in the matter of diphtheria prevention.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE. HOWARD A. CARTER, Secretary.

### HEATING OF HUMAN TISSUES BY SHORT WAVE DIATHERMY

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AND

HOWARD A. CARTER, B.S. IN M.E.

CHICAGO

In heating human tissues by short wave diathermy, claims have been made that certain wavelengths are more effective than others. A survey of current literature reveals many opinions. Apparently none of the authors have investigated the heating effects of different frequencies of short wave diathermy energy on living tissues of the human thigh. There are many references to heating of dead tissues and agar agar solutions.

Schereschewsky,<sup>1</sup> in his studies of dead tissues, found that a 4.69 meter wavelength had a greater heating effect on muscle than a 1 meter wavelength.

Schliephake<sup>2</sup> performed his experiments by placing pieces of individual tissues of equal size in the condenser field, at the same time taking care to keep the field strength as constant as possible. Amputated arms and legs likewise were used. He investigated wavelengths ranging from 3.5 meters to 14 meters, employing seventeen different wavelengths in all. He concluded that the heating of individual tissues in a unit of time varied when energy of certain wavelengths was used. When treating dead pieces of tissue he observed that the fat was usually strongly heated, although the absolute height of the temperature varied. Animal fat gave different values from human fat. Furthermore, fatty tissues of different men gave different values. Schliephake's explanation for this was that fat is a storehouse for various kinds of minerals. Schliephake stated that, in a leg examined by him, the maximum heating of fat was obtained with 14.5 meters and the minimum with 7 meters. He further stated that there was quite commonly a decrease in the heating effect on all kinds of tissues when wavelengths of 17 meters were exceeded.

Gebbert,<sup>3</sup> as quoted by Kowarschuk,<sup>4</sup> found the heating of fat and muscle the same with wavelengths from 3 meters to 16 meters in his study of the influence of different wavelengths from a condenser field on the heating of muscle, bone, fat and bone marrow (dead tissue).

Bachem<sup>5</sup> used 3.5, 5, 7 and 15 meter wavelengths in his studies on dead tissues. With these wavelengths there was little difference in the heating effect in the muscle of the dead tissues. He found that the strongest heating of the subcutaneous fat was observed with the 5 meter wavelength, which gave a comparative temperature increase of 4 degrees C., while the 15 meter gave about 2.2 degrees C.

Schliephake<sup>2</sup> gave heating curves for muscles close to the bones, the medial muscles, and the boundary

<sup>1</sup> Schereschewsky, J. W. Heating Effect of Very High Frequency Condenser Fields on Organic Fluids and Tissues, Pub. Health Rep. 48: 844-858 (July 21) 1933.

<sup>2</sup> Schliephake, E. Short Wave Therapy, London, Actinic Press, Ltd., 1935.

<sup>3</sup> Gebbert, A. Der Einfluss der Wellenlänge auf die Wärmeverteilung im Körper bei Ultrakurzwellentherapie, Klin. Wochenschr. 13: 1563-1565 (Nov. 3) 1934.

<sup>4</sup> Kowarschuk, Josef. Kurzwellentherapie, Vienna, Julius Springer, 1936.

<sup>5</sup> Bachem, A. Selective Heat Production by Ultrashort Waves, Arch. Phys. Therapy 16: 645-650 (Nov.) 1935.

between subcutaneous fat and muscles. The maximum heating for these tissues was observed at 14 or 15 meter wavelengths, and the minimum at 7 meters.

Holzer and Weissenberg,<sup>6</sup> in their work on dead tissues, showed that there was approximately 200 watts more heating with a 20 meter wavelength than with 10 meters when calculating the heat production in watts per ampere for cubic centimeters of tissue.

In the heating of dead human tissues it is possible to obtain different heating effects with energy at different wavelengths, but there is a considerable difference in the opinion of the investigators about the heating of fat and muscle. Schliephake noted that the maximum heating of fat was at 14.5 meters and the minimum at 7 meters. Gebbert observed no difference between 3 meters and 16 meters. Bachem found the greatest heating at 5 meters.

In the heating of muscle, Schereschewsky noted that there was a greater heating with a 4.69 meter wave than with 1 meter. Gebbert observed no difference between 3 meters and 16 meters. Schliephake noted that the maximum heating of muscle was at 14.5 meters. Holzer and Weissenberg found a greater heating of muscle at 20 meters than at 10 meters.

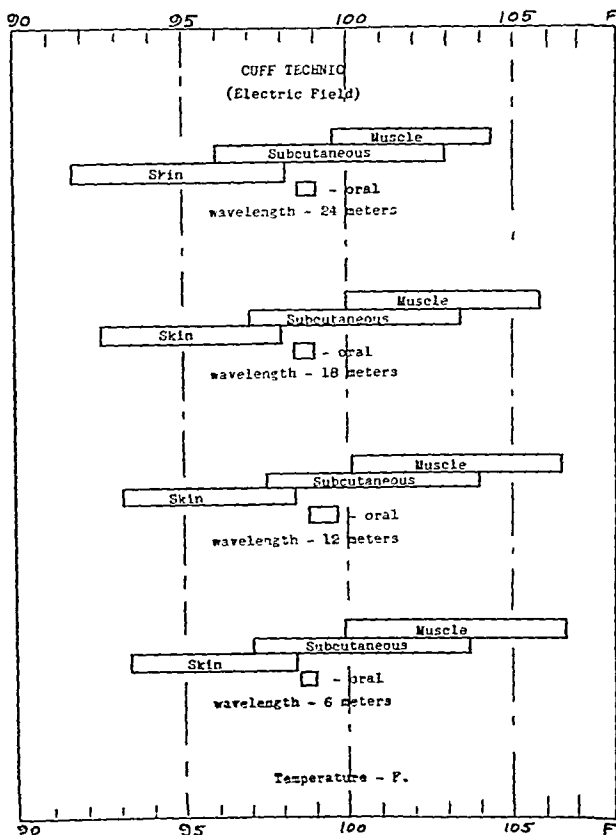


Chart 1.—Relation between wavelength and temperature with cuff electrode method.

In reviewing the aforementioned results, we can agree with Schliephake in his statement "From the results obtained on parts of dead bodies, we cannot conclude as to the results on living human beings," and with Kowarschik,<sup>4</sup> who states that unfortunately we do not know the electrical constants for most tissues and that what is known is very questionable.

Our investigation was undertaken because, apparently, there were no records in literature of heating living human tissues by short wave diathermy machines of different wavelengths. Therefore, this study was made to determine the heating efficacy of short wave diathermy in living human fat and muscle of the thigh, employing, first, an electric field of 6, 12, 18 and 24 meter wavelengths, using the cuff electrode technic;

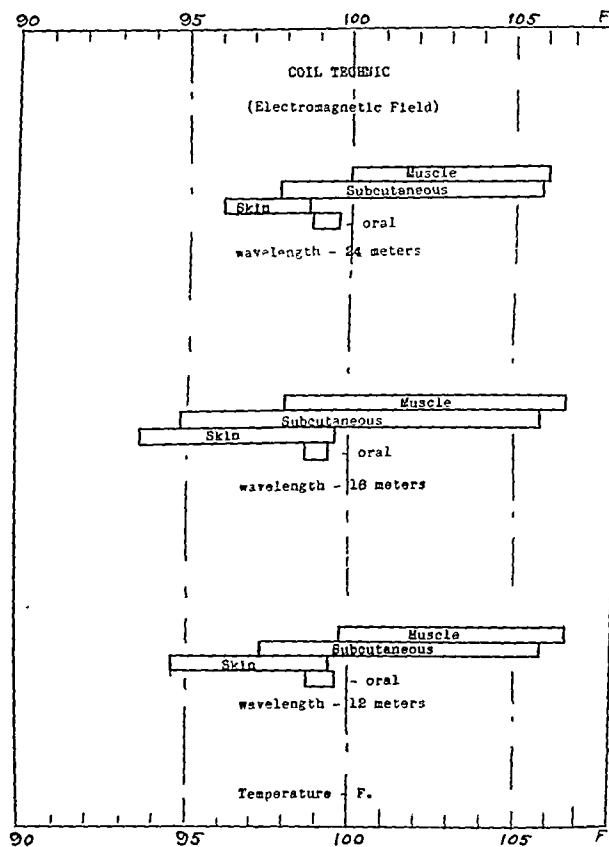


Chart 2.—Relation between wavelength and temperature with coil technic.

secondly, an electromagnetic field of 12, 18 and 24 meter wavelengths, using the coil technic. The cuff electrode of the electric field and the coil of the electromagnetic field were selected because previous work by Mortimer and Osborne<sup>7</sup> showed these methods of application to be the most effective of those in general use for heating tissues.

The machine used in these tests was so designed that the oscillator circuit could be interchanged, thus giving the range of wavelengths aforementioned. Furthermore, arrangements were made for application by either electromagnetic or electric field technics. Temperatures were taken by three thermocouples made of copper and constantan wires (28 gage Leeds-Northrup double cotton covered), soldered into the tip of a 16 gage lumbar puncture needle. The thermocouples were connected to the potentiometer (Leeds-Northrup portable precision type) through parallel double pole switches, a method that facilitated rapid reading of the individual couple.

The thermocouples were calibrated against a Bureau of Standards calibrated thermometer with scale division in one-tenth degree Fahrenheit. Since the thermocouple

6. Holzer, Wolfgang, and Weissenberg, E. Foundations of Short Wave Therapy, London, Hutchinson's Scientific and Technical Publications, 1936.

7. Mortimer, Bernard, and Osborne, S. L.: Tissue Heating by Short Wave Diathermy. Some Biologic Observations, J. A. M. A. 104: 1415 (April 20) 1935

itself was affected by the high frequency currents, there were no thermocouples in place in the field during the passage of the current.

The six human subjects were medical students who volunteered for these tests. Under aseptic precautions, a nonmagnetic nonconducting sheath (through which the thermocouple needle could be guided for temperature readings) was inserted subcutaneously and into the quadriceps extensor muscle. Temperatures of the skin, of the subcutaneous tissue, of the muscle and of the mouth were taken before and after a twenty-minute clinical application. The temperature of the patient was permitted to return to normal after each test.

The intensity of the current was governed by the patient's tolerance; that is to say, the subject agreed to stand as much of the current as was possible without suffering discomfort.

The size of the cuff was approximately 18 inches by 3 inches. One cuff was wrapped around the proximal part of the thigh and the other around the distal part of the thigh. The distance between the edges of the cuffs was about 6 to 8 inches. Under the cuffs, padding consisting of three thicknesses of felt and toweling was

the electromagnetic method, was lower than comparable initial temperatures of other wavelengths. Scrubbing with soap, applying disinfectants and injecting the anesthetic preparatory to inserting the cannula made the thigh cooler for the first observation than for the six subsequent observations. In the initial average temperature of the 18 meter wavelength, two of these first or low temperature readings were included instead of one reading as in the other averages. This explains the low initial average temperature of the 18 meter subcutaneous temperature readings of the electromagnetic field. Each final temperature reading was within the experimental error of the average of the six observations; hence these readings are regarded as more significant.

A practical and social problem becoming more and more important is the interference of short wave diathermy energy with radio communications. Mimno<sup>8</sup> reported that radio interference originating in a standard commercial short wave diathermy machine near the Harvard campus was picked up at the Naval Laboratory, Bellevue, D. C. The automatic keyed signals on 11.8 kilocycles (25.4 meters wavelength) were broad-

#### Summation of Results

Wave-length	Deep High Muscles Temperature			Subcutaneous Temperature			Skin Temperature			Oral Temperature		
	Initial	Final	Rise	Initial	Final	Rise	Initial	Final	Rise	Initial	Final	Rise
Cuff Technic, Electric Field												
24	99.55	104.27	4.72	95.85	102.85	7.00	91.73	98.20	6.47	98.53	99.03	0.50
18	100.05	105.73	5.68	97.03	103.35	6.32	92.52	97.98	5.46	98.35	99.08	0.73
12	100.13	106.45	6.32	97.48	105.98	8.50	91.13	98.42	7.29	98.80	99.66	0.86
6	99.93	106.58	6.65	97.12	103.68	6.56	91.33	98.40	7.07	98.50	99.07	0.57
Coil Technic, Electromagnetic Field												
24	99.97	106.05	6.08	97.72	105.81	8.11	96.08	98.71	2.63	98.77	99.00	0.23
18	97.98	106.72	8.74	94.82	105.77	10.95	91.62	99.58	7.96	98.70	99.35	0.65
12	99.73	106.60	6.87	97.33	105.83	8.50	94.75	99.37	4.62	98.07	99.00	0.93

used. Under the four turns of coil there was one-half inch of felt padding.

A summation of the results is given in the accompanying table. It shows the initial and final temperatures and also the temperature rises. The results are the average of six observations at each wavelength.

Chart 1 shows the relation between wavelength and temperature with the cuff electrode method.

Chart 2 shows the relation between wavelength and temperature with the coil technic.

The power input of these machines ranged from approximately 400 to 800 watts. There did not appear to be any satisfactory method of measuring the output in terms of electrical units. Several methods have been suggested to measure output, but not one of them faithfully records the amount of power used by the patient undergoing treatment.

A discussion of the probable sources of error in observations seems advisable. With our potentiometer-thermocouple hookup the temperature could be read to an accuracy of 0.2 degree Fahrenheit. Although the surgeon was able to place the cannula fairly accurately in the quadriceps extensor muscle, the placing of the cannula for observing subcutaneous temperatures was not so easily accomplished. The depth below the skin of the inner end of the cannula varied as much as 3 or 4 mm. in the six subjects. This unavoidable inaccuracy may be one reason for the slight differences of reading from subject to subject, especially in the subcutaneous temperature readings.

The average initial subcutaneous temperature observed with the 18 meter wavelength, using the coil technic of

cast by a short wave diathermy machine which was not equipped with an antenna, the high frequency radiation being fed back unintentionally through the power supply line. An interesting observation made by him was that the signals were hardly audible several miles from the source but were of good signal strength at the Naval Laboratory. This apparently affords proof of the fact that the radio wave was strongly reflected by the ionized regions of the upper atmosphere.

Two remedies have been proposed: one<sup>9</sup> is the allocation of a special wavelength band for therapeutic purposes and the other is the proper screening of short wave diathermy machines and equipment. If, in subsequent investigations, a single frequency was found to be satisfactory for all treatments, the oscillators would have to be stabilized so that deviation of no more than a kilocycle from this assigned frequency would ever occur. Short wave diathermy machines would have to be manufactured with a frequency stability corresponding to a good radio transmitter. This remedy would necessarily increase the original cost and the maintenance expense. If the second remedy should be adopted, radio-frequency filters or wave traps would have to be inserted in the power leads to prevent reradiation of the high frequency energy back into the power mains, and the treatment room would have to be screened and grounded. The additional expense of this installation would increase the original cost of the

8. Mimno, H. R.: Interference Source Discovered, *Electronics*, February 1936, p. 19.

9. Short Wave Diathermy—"The Shadow," editorial, J. A. M. A. 106: 1094 (March 28) 1936.

machine. Because of the ever increasing need for radio communication channels, it would seem that the method of screening and line filtering takes precedence over the allocation of a wave band for therapeutic purposes.

#### CONCLUSION

In the heating of live human muscle and fat there were no significant differences in the use of 6, 12, 18 and 24 meter wavelengths when using the cuff technic of the electric field method and no significant differences in the use of 12, 18 and 24 meter wavelengths when using the coil technic of the electromagnetic field method.

### Committee on Foods

THE COMMITTEE ON FOODS HAS HAD BEFORE IT THE PERPLEXING PROBLEM OF THE VITAMIN D FORTIFICATION OF MILK. A STUDY WAS UNDERTAKEN BY DR. PHILIP C. JEANS, AT THE SUGGESTION OF THE COMMITTEE, FOR THE PURPOSE OF OBTAINING CERTAIN FACTUAL DATA THAT MIGHT AID THE COMMITTEE IN THE FORMULATION OF FUTURE POLICIES. DR. JEANS HAS PRESENTED TO THE COMMITTEE ON FOODS A REVIEW OF THE LITERATURE ON THE SUBJECT. BECAUSE OF THE VALUABLE MATERIAL IN THE REVIEW, THE COMMITTEE ON FOODS HAS AUTHORIZED PUBLICATION OF THE REPORT WITH THE VIEW OF AIDING PHYSICIANS, THE PUBLIC AND THE MILK INDUSTRY TO A BETTER UNDERSTANDING OF THE PROBLEM. IN SO DOING, THE COMMITTEE TAKES OPPORTUNITY TO EXPRESS ITS GRATEFUL APPRECIATION TO DR. JEANS FOR THE TIME HE HAS DEVOTED TO THE SUBJECT AND FOR THE PREPARATION OF THIS REPORT.

FRANKLIN C. BING, Secretary.

#### VITAMIN D MILK

##### THE RELATIVE VALUE OF DIFFERENT VARIETIES OF VITAMIN D MILK FOR INFANTS: A CRITICAL INTERPRETATIVE REVIEW

PHILIP C. JEANS, M.D.

IOWA CITY

In this presentation an attempt is made to evaluate in relation to the human infant the relative potencies of the different varieties of vitamin D<sup>1</sup> as found commercially in vitamin D milks. Orientation in this endeavor is aided by a brief consideration of the relative values as determined for the experimental animal.

#### EXPERIMENTAL WORK WITH ANIMALS

The animals used chiefly are the rat and the chick. The lesser potency of irradiated ergosterol as compared to cod liver oil has been established beyond any reasonable doubt when these two materials are fed on an equal rat unit basis in experiments with the chicken. The numerical difference found depends chiefly on dietary and other variants in the experiments with chickens and has varied somewhat with different observers. The report of Bethke, Record and Kennard,<sup>2</sup> which includes a brief review of preceding studies, seems to establish the ratio of efficacy of cod liver oil to irradiated ergosterol at 1:15 to 20.

On the basis of rat unitage it has been found that cod liver oil, irradiated milk and irradiated cholesterol are of equal value to the chicken.<sup>3</sup> Calciferol<sup>4</sup> (a crystalline vitamin D) irradiated yeast<sup>4</sup> and milk from cows fed irradiated yeast<sup>5</sup> have been found of the same relative value for the chicken as irradiated ergosterol. Apparently the cow, as also very definitely the chicken,

does not change the biologic form of the vitamin when it makes the vitamin D available for the use of the offspring in the milk or the egg.<sup>6</sup>

Thus it is evident that at least two, and possibly only two, varieties of vitamin D exist. Purely laboratory products, formed neither in nature nor by the action of ultraviolet radiation, are not considered here. The products mentioned in the preceding discussion fall into two groups when considered in relation to their source. Those of animal origin are of one and equal value to the chicken; those of vegetable origin are of another value, also equal within the group. The differences between the two groups may depend on the relationship of vitamin D to cholesterol in one group and to ergosterol in the other group.

It is desirable to state that the relative position of "yeast milk" (milk from cows fed irradiated yeast) in the group of vitamin D materials named is not as clear as that of the other substances. Haman and Steenbock<sup>7</sup> found cod liver oil and also irradiated milk to be at least ten times as effective as "yeast milk." Bethke and his co-workers<sup>8</sup> found these materials to be "more than ten times" as effective as "yeast milk." In neither Bethke's nor Steenbock's experiment was the relative effectiveness of irradiated ergosterol determined. Older experiments indicate that the ratio of effectiveness of cod liver oil to irradiated ergosterol is 1:15 to 20 or more. No data have been found which permit a direct comparison of "yeast milk" with either irradiated ergosterol or irradiated yeast. In his paper Bethke states his belief that "yeast milk" is of the same value as irradiated yeast and elsewhere<sup>9</sup> he attributes the apparent discrepancy chiefly to the basal ration used.

Bills<sup>10</sup> has reported that the vitamin D of the liver oil of the blue fin tuna fish has for the chicken from one-sixth to one-seventh the potency of cod liver oil. Whether tuna liver oil contains a third variety of vitamin D is an unanswered question. Though an understanding of the problem raised by this observation is highly desirable, the finding seems to have no direct bearing on the evaluation of any of the vitamin D milks now produced and marketed.

#### APPLICATION TO MAN OF RESULTS WITH ANIMALS

No agreement has been reached concerning the relation of the human being to the rat and the chicken as regards reaction to vitamin D. Regardless of what may be this position, it would not be surprising to find that all vitamin D of animal origin has a similar potency and all vitamin D of vegetable origin another potency.

Let it be assumed for the purpose of illustration in discussion that the ratio of effectiveness of cod liver oil as compared to irradiated ergosterol on a rat unit basis is 1:1.5 for the human being; that all vitamin D of animal origin has the same value as cod liver oil, and that all vitamin D of vegetable origin has the same value as irradiated ergosterol. Such a relatively small difference may be difficult to detect by any but the most carefully controlled clinical experiments. If the minimum rickets-preventing intake of vitamin D of animal origin should be 70 units and that for vitamin D of

1. In all instances amounts of vitamin D are stated in terms of U. S. P. units (U. S. P. X Revised 1934).

2. Bethke, R. M.; Record, P. R., and Kennard, D. C.: *J. Nutrition* 6: 413 (Sept.) 1933.

3. Waddell, J.: *J. Biol. Chem.* 105: 711 (July) 1934. Bethke, Record and Wilder.<sup>4</sup> Haman and Steenbock.<sup>7</sup>

4. Bethke, R. M.; Record, P. R., and Wilder, O. H. M.: *J. Biol. Chem.* 112: 231 (Dec) 1935.

5. Haman and Steenbock.<sup>7</sup> Bethke, Krauss, Record and Wilder.<sup>8</sup>

6. Waddell.<sup>3</sup> Bethke, Krauss, Record and Wilder.<sup>8</sup>

7. Haman, R. W., and Steenbock, Harry: *J. Nutrition* 10: 651 (Dec.) 1935.

8. Bethke, R. M.; Krauss, W. E.; Record, P. R., and Wilder, O. H. M.: *J. Nutrition* 11: 21 (Jan.) 1936.

9. Bethke, R. M.: Personal communication to the author.

10. Bills, C. E.; Massengale, O. N., and Imboden, Miriam: *Science* 80: 596 (Dec. 21) 1934.

vegetable origin 105 units, and if both vitamins D should be fed at a level of 105 units or more, the two products might appear to be of equal value, depending on the criteria used. Though the ratio of effectiveness and the minimum preventive doses stated may not be acceptable, the fallacy inherent in comparisons above the minimal effective level seems obvious unless the criteria of comparison extend beyond the mere prevention of rickets and include other factors influenced by vitamin D, which are discussed subsequently.

Accurate determinations of differences in vitamin D activity are associated with many difficulties even with the most rigid control possible with experimental animals. The difficulties are greatly increased in clinical studies; the differences in vitamin D activity apparently are much smaller, and strict control is not easily attained, especially in outpatient studies. Considering these factors and the individual variation among infants, it is not surprising that conflicting reports to the point of confusion have resulted from clinical experiments.

#### PREVENTIVE VERSUS CURATIVE STUDIES

Both preventive and curative studies are useful in comparing antirachitic agents. The presence or absence of rickets depends on the relative rate of growth and the intakes of calcium, phosphorus and vitamin D. In either a preventive or a curative study it is obvious that one cannot alter all these factors and still have a basis of comparison for one of them. In a curative experiment the time factor in healing and whether the healing is partial or complete are of especial importance. Bills<sup>11</sup> has shown that the time required for healing is not directly proportionate to the amount of vitamin D. In rats the production of 2 plus healing in three days requires 105 times and in five days 4.5 times as much vitamin D as is required to produce the same amount of healing in ten days. Apparently one may obtain a slight degree of healing with amounts of vitamin D smaller than a preventive dose. Bethke<sup>12</sup> has reported experiments wherein a degree of calcification was produced in rachitic rats from amounts of vitamin D insufficient for prophylaxis with the same diet. Russell,<sup>13</sup> as a result of experimental observations, states that "the unit or 1 plus level, determined curatively, affords only partial protection when fed on a preventive basis." It seems to require about 0.5 unit daily to prevent rickets in rats given the Steenbock diet 2965,<sup>14</sup> while it requires only about 0.27 unit daily for eight days to cause the amount of healing in ten days accepted as a standard in the Steenbock technic. However, it must be recognized that the minimum preventive dose and the dose which will produce ultimate complete healing may be the same, and that for rapid healing the dose must be larger than the preventive dose. It seems probable that, the greater the degree of rickets, the smaller the amount of vitamin D required to produce a slight degree of healing. Two plus healing is generally considered as representing a substantial increment of recalcification. This has not been found to be true for the rat.<sup>14</sup> Apparently 2 plus healing can occur with a bone ash increase of less than 1 per cent as compared to controls. If the same conditions hold for infants as have been found for rats as regards the correlation of the roentgenogram with the bone ash

increase, healing studies concern themselves largely with exceedingly variable and almost insignificant calcification, except when marked and rapid healing is recorded. All the factors enumerated make curative studies difficult to evaluate. For comparison it is essential that they be conducted with the various influencing factors on a common basis.

#### OUTPATIENT VERSUS INPATIENT STUDIES

Outpatient studies are necessary in order to obtain experimental material in volume, but such studies have inherent weaknesses which are difficult to overcome. Except for detection of gross differences, outpatient studies are rarely conclusive as regards quantitative comparisons. In inpatient studies the environment of all the infants is the same and presumably the intake of food of each infant can be more definitely determined and controlled than is possible even in a well conducted outpatient study. Certain types of quantitative study are possible only with inpatients.

#### QUANTITATIVE VERSUS QUALITATIVE STUDIES

The term quantitative as here employed implies the accurate measurement of a considerable number of factors related to the question to be answered by the experiment. These measurements in the case of vitamin D milk studies might include the intake of food and vitamin D, the body growth, periodic estimates of the calcium and phosphorus of the blood, and by balance studies the determinations of retentions of calcium, phosphorus and nitrogen. The inclusion of all these, especially of balance studies, limits greatly the number of children who can be observed at one time. Such studies are useful in determining trends, which serve as guides in the observation of larger and more loosely organized groups. It seems fair to state that each of the quantitative items mentioned adds to the ease of interpretation and therefore to the value of reported studies. In the review of the literature of vitamin D milks it was especially noticeable that chemical studies were a great aid in evaluating the clinical data. Serum calcium and phosphorus determinations are as valuable in preventive as in curative studies, though in each type of study some interpretation may be required. Chemical data constitute criteria that are wholly objective, whereas roentgenograms can be recorded satisfactorily in a publication only in terms of interpretation.

#### PREVENTION OR CURE OF RICKETS AS A CRITERION OF ADEQUACY OF VITAMIN D

Both the prevention and the cure of rickets may be used as criteria for comparing the relative efficacy of various forms of vitamin D. The trend of the literature, however, is to consider that the minimal amount of vitamin D which will prevent or ultimately cure rickets is an adequate amount for the infant. This concept is probably incorrect and may be considered as comparable to the conclusion that prevention of xerophthalmia is evidence of adequate intake of vitamin A. Evidence for this contention is presented in succeeding paragraphs.

#### THE RELATION OF VITAMIN D TO CALCIUM RETENTION

Criticisms of the utility of calcium retentions have been stated on the basis of wide variations shown by individual babies or even by the same babies on different occasions. It was pointed out by Stearns<sup>15</sup> that

11. Bills, C. E.; Honeywell, Edna M.; Wirick, Alice M., and Nussmeier, Mildred: *J. Biol. Chem.* **90**:619 (Feb.) 1931.

12. Bethke, R. M.; Kennard, D. C., and Sassaman, H. L.: *J. Biol. Chem.* **72**:702 (April) 1927.

13. Russell, W. C.; Taylor, M. W., and Wilcox, D. E.: *J. Nutrition* **9**:569 (May) 1935.

14. Zucker, T. F.: Science, to be published.

15. Stearns, Genevieve, and Jeans, P. C.: *J. Biol. Chem.* **114**:c (May) 1936.

the calcium retention by babies receiving little or no vitamin D has a wide range. Some retention is very good, other retention poor. As the intake of vitamin D is increased the average retention of calcium per kilogram is increased for any given per kilogram intake and the range of observed retentions narrows. The chief result of increased vitamin D seems to be in increasing the average level of retention of each infant to that of the best retention obtained without added vitamin D and in narrowing the range of retentions found. Thus it would seem that the range of variation is relatively narrow when effective amounts of vitamin D are given and that a wide range is characteristic of small or negligible amounts of vitamin D. When interpreted in the light of this discussion, balance experiments permit results which are reproducible with regularity.

A level of vitamin D which barely prevents rickets, such as vitamin D milk with 135 units to the quart, permits average calcium retentions definitely lower than those obtained with 400 unit milk or with one teaspoonful of cod liver oil.<sup>16</sup> If an amount of vitamin D which merely prevents rickets does not permit what are considered to be optimal retentions of calcium, rickets prevention cannot be accepted as a criterion of the adequacy of vitamin D intake. The difficulty here lies in the incomplete knowledge of what constitutes an optimal retention. However, probably few physicians would consider that any retentions obtained with one teaspoonful of cod liver oil daily are excessive; the amount of cod liver oil which prevents rickets seems to be approximately one third of this amount. Actual retentions with these amounts of vitamin D are stated subsequently.

#### THE RELATION OF VITAMIN D TO GROWTH

A certain few nutritional essentials have acquired the designation of "growth promoting." It is well recognized, however, that growth is retarded by deprivation of several materials not commonly designated in this fashion. The importance of calcium in growth has been demonstrated abundantly for animals.<sup>17</sup> To the extent that this finding applies to the human being and to the extent that vitamin D aids in calcium utilization, vitamin D is important for growth. Little has appeared in the literature concerning the relation of calcium to growth in man. Two reports by Jeans and Stearns<sup>18</sup> suggest the possibility that such a relationship exists. Daniels and her co-workers<sup>19</sup> found that infants receiving cod liver oil had a greater rate of growth than infants receiving the same diet without cod liver oil; the increased growth was attributed to vitamin D rather than to vitamin A. If a relationship actually exists between growth and vitamin D and if the amount of vitamin D which barely prevents rickets does not permit excellent growth, rickets prevention cannot be accepted as a criterion of adequacy of vitamin D intake.

It seems probable that a fallacy exists in considering growth as excellent when it merely falls within the limits of average growth by the usual standards such as those of Stuart or Kornfeld. Averages are made

up of data from children who have received good, poor and indifferent nutritional care. Normal or excellent growth should be judged on the basis of what children will do when the nutritional factors that promote growth are favorable. The question as to whether growth curves at the upper limits of the average range represent really superior or optimal growth is not easily answered, but at least it is reasonable to think of it as superior on the basis of the factors mentioned in this discussion. One of the conclusions reached by Daniels<sup>19</sup> in a growth study is that the accepted standards of growth for infants are too low.

#### THE DIAGNOSIS OF RICKETS

Very brief reference to the literature<sup>19</sup> is all that is necessary to show that the clinical diagnosis of rickets (without roentgenograms) is unreliable and that great disagreement exists between the clinical diagnoses of various observers as well as between the clinical and roentgenographic diagnoses of the same observer. Logic favors the view expressed by Eliot,<sup>20</sup> who stated that "doubt is thrown on the reliability of clinical diagnoses of mild rickets in the absence of roentgenographic evidence of the disease." It would seem safe to take the stand that the clinical diagnosis of slight or mild rickets is not acceptable as evidence of this disease.

Reference to the literature<sup>19</sup> also makes obvious the conclusion that the criteria of roentgen diagnosis are not the same among those conceded to be expert in this field. A contrast is to be noted between Hess's 15 per cent incidence of rickets in a group selected at random and the 63 per cent or more in Eliot's group under good care and receiving vitamin D from two sources.

In further illustration of the variation in interpretation of roentgenograms of epiphyses of infants by different observers, the following experience is cited:<sup>21</sup> A series of roentgenograms of the wrist of each of twenty-five infants was used as the basis of an inquiry. This series of roentgenograms was obtained from three groups of infants who had been studied quantitatively; the intakes of milk and of vitamin D were known, the calcium and phosphorus retentions had been studied throughout the major part of infancy, the levels of calcium and of phosphorus in the serum had been determined at intervals, and accurate records had been kept of growth, dentition and motor achievement. The infants of groups 1 and 2 had been given whole acidified fresh or evaporated milk respectively and had received 340 units of vitamin D daily (an average of 50 units per kilogram), together with orange juice, sieved vegetables and fruits. The babies of group 3 received the same foods as those of the first two groups but only from 60 to 135 units of vitamin D a day (an average of 15 units per kilogram).

The serum calcium and phosphorus values in all three groups were normal; i. e., calcium was always above 10 mg. and phosphorus always above 5 mg. per hundred cubic centimeters. Each infant in groups 1 and 2 grew both in length and in weight at greater than the average rate; dentition was early, most of the infants having cut two teeth by 6 months of age and six teeth by 9 months of age. No infant attained the age of 8 months without having cut at least two teeth. Carpal centers became visible to the x-rays more rapidly than

16. Jeans, P. C., and Stearns, Genevieve: *Proc. Soc. Exper. Biol. & Med.* **31**:1159 (June) 1934. Stearns, Genevieve; Jeans, P. C., and Vandecar, V.: *J. Pediatr.*, to be published.

17. Osborne, T. B., and Mendell, L. B.: *J. Biol. Chem.* **34**:131 (April) 1918. Sherman, H. C., and Campbell, H. L., *ibid.* **60**:5 (May) 1924. Sherman, H. C., and MacLeod, Florence L., *ibid.* **64**:429 (June) 1925. Sherman, H. C., and Campbell, H. L.: *J. Nutrition* **2**:415 (March) 1930; **10**:363 (Oct.) 1935. Sherman, H. C., and Bocher, L. E.: *J. Biol. Chem.* **93**:93 (Sept.) 1921. Campbell, H. L.; Jessy, O. A., and Sherman, H. C., *ibid.* **110**:703 (Aug.) 1935.

18. Daniels, Amy L.; Hutton, Mary K.; Stearns, Genevieve, and Hejninian, Lucia M.: *The Relation of Rate of Growth in Infants to Diet*, *Am. J. Dis. Child.* **37**:1177 (June) 1929.

19. Eliot, Martha M.: *The Control of Rickets*, *J. A. M. A.* **85**:656 (Aug. 29) 1925. Hess, Lewis, MacLeod and Thomas.<sup>20</sup> Eliot and Jackson.<sup>20</sup> Kramer and Gittleman.<sup>28</sup> Wilson.<sup>40</sup>

20. Eliot, Martha M., and Jackson, Edith B.: *Bone Development of Infants and Young Children in Puerto Rico*, *Am. J. Dis. Child.* **46**:1237 (Dec.) 1933.

21. Personal experience of the reviewer.



is usual. The infants were physically very active. The majority were able to sit unsupported by 6 months of age and could pull themselves to standing by 9 months. In short, the infants of these two groups were superb physical specimens. The retentions of calcium, phosphorus and nitrogen were very high, indicating that, notwithstanding the rapid growth, the mineralization of bones and the muscular development were above the average.

The rate of growth of the infants of group 3 was much slower than that of the babies in the other two groups, although it could be considered "average." Dentition was late; most of the infants did not begin cutting teeth until 8 or more months of age. None of these infants were able to sit unsupported at 9 months of age; two were able to do so by 10 months, but the muscles were flaccid and the posture poor. The retention of calcium and phosphorus by the babies of this third group was much less than in the babies of groups 1 and 2; so much less that the slower rate of growth did not compensate, and the retention per kilogram of weight increase and per centimeter of growth in length was definitely lower than the retention for the babies of groups 1 and 2.

The investigators who examined the roentgenograms of the wrists of the babies of these three groups included two who are expert in reading roentgenograms of infants, two heads of roentgenology departments in medical schools and an orthopedic surgeon experienced in reading roentgenograms of bone. All observers agreed that no infant in group 3 showed any evidence of rickets. One of the two experts and the orthopedic surgeon found no evidence of rickets in any of the roentgenograms in either group 1 or group 2. The

TABLE 1.—Data Pertaining to J. A. (Group 2), Born Feb. 16, 1930

Date, 1930	Rickets	Daily Calcium Retention, Gm.	Weight, Gm.	Serum	
				Ca	P
5/13	.....	0.350	5,965		
5/19	Doubtful	.....	.....		
5/27	.....	0.360	6,360		
6/6	Slight, under control	.....	.....	12	7.3
6/10	.....	.....	.....		
6/17	.....	0.326	6,980		
7/5	Slight, under control	.....	.....	11.5	6.7
7/7	.....	.....	.....		
Average blood values of group 3, calcium 11.6, phosphorus 5.8					
Average daily calcium retention J. A. from 10th to 20th week.....				Gm.	0.236
Average daily calcium retention group 3 for same period.....				Gm.	0.253
Total calcium retention J. A. during 35 days, which include the					
period of rickets.....					11.76
Average total calcium retention group 3 for same period.....					8.2
Retention of calcium per kilogram of growth J. A. same per.					
(weight increase 1.016 Kg.).....					11.44
Average retention per kilogram growth group 3 (weight increase					
0.83 Kg.).....					9.6
Retention of calcium per centimeter growth J. A. same per. (in-					
crease from 62 to 67 cm.).....					3.87
Average retention per centimeter growth group 3 (average in-					
crease 2.35 cm.).....					3.22

other observers each found evidence of slight rickets in both groups 1 and 2. In fact, each infant in these two groups was diagnosed as rachitic at some time during the period of infancy by at least one person. Rarely did two people agree as to the period of rickets. In view of the chemical data and growth and achievement records of these three groups of babies, it is surprising to find the interpretation of rickets in the babies of groups 1 and 2 and of no rickets in those of group 3. For the purpose of illustration, chemical data obtained from two infants of groups 1 and 2 are presented here, together with average data obtained from the studies

of the babies of group 3. The infants cited were each typical of the infants of their groups; they are chosen because of the definite diagnosis of rickets made by an expert observer. For the sake of brevity only calcium retentions are stated; phosphorus retentions corresponded to the expected values as calculated from the calcium and nitrogen retentions.

J. A. (table 1) grew faster both in length and in weight than did the babies of group 3. During a thirty-

TABLE 2.—Data Pertaining to C. T. (Group 1), Born Dec. 3, 1928\*

Date, 1929	Rickets	Daily Calcium Retention	Weight, Gm.
3/3	.....	0.309	6,120
3/14	Doubtful	.....	.....
3/18	.....	0.333	6,670
3/31	.....	0.327	6,400
4/20	Doubtful, slight spreading	.....	.....
5/18	Slight, under control	.....	.....
6/1	.....	0.309	7,400
6/13	Slight, under control	.....	.....
6/16	.....	0.635	7,690
6/30	.....	0.558	7,900
7/6	Slight (?), under control	.....	.....
7/20	.....	0.495	8,400

\* In the period from 3/3/29 to 7/20/29 C. T. grew 10.2 cm. in length and gained 2.28 Kg. The retentions were consistently higher than those of the babies of group 3.

five day period, which includes the time of the diagnosis of rickets, he retained more total calcium per kilogram and per centimeter of growth than did the babies of group 3 considered in the same age period. His serum calcium and phosphorus values were slightly higher than those of group 3. He received more vitamin D in his food and in addition received an abundance of sunlight during the time that "rickets" developed. He had cut three teeth at 22 weeks and sat alone at 25 weeks of age. Despite all these indications of good growth he had what was termed rickets, whereas the babies of group 3 with poorer retention for each unit of growth and poorer physical development had no rickets.

In the roentgenograms of those diagnosed as having slight rickets, something definite is present which differs from the appearance of roentgenograms usually classed as normal. Various observers interpret these changes differently and thus may be explained the differences in reported readings. The changes in the roentgenograms, though slight, are readily demonstrable and are identified repeatedly and without confusion by the same observer in a long series of examinations. These changes appear in the roentgenograms of babies receiving little or no vitamin D, tend to be absent in those of babies receiving moderate amounts of vitamin D, and appear in those of babies receiving an abundance of vitamin D. In the babies receiving little or no vitamin D and who are developing rickets as shown by later observation, the changes are the precursors of those which characterize unmistakable rickets. When they appear in babies who are receiving an abundance of vitamin D and who have high retentions of calcium and phosphorus, they obviously cannot represent the early stages of rickets but may be merely concomitants of rapid normal growth.

On the basis of these premises the diagnosis of slight rickets has been disregarded in the interpretation of the studies of this review. If the premises are unacceptable, the diagnosis of slight rickets must be disregarded in order to bring the various reported studies onto a more common ground for comparison.

(To be continued)

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SATURDAY, JUNE 13, 1936

## THE FREQUENCY OF SMALLPOX AND SMALLPOX VACCINATION

Reasonably accurate data are now available from which it is possible to make a rough estimate of the extent of vaccination in the United States. A nationwide survey,<sup>1</sup> which included 9,000 families in 130 localities in eighteen states, was made over a twelve months period. Thirty-nine thousand persons in every size of community were represented in the group. While it is natural that the statistics resulting from this study cannot be projected to the whole population, a definite effort was made to have the group entirely representative in all factors. The proportion of persons of different ages who gave a history of vaccination within seven years of the date of interview varied, according to Collins, from a maximum of 60 per cent at 10 years of age to 23 per cent at 20 to 24 years and 16 per cent at 25 to 34 years. The decline occurred at a less rapid rate thereafter. It was thus indicated that only perhaps 10 per cent of the people were revaccinated at intervals of seven years or less and that the great majority of children vaccinated at the time of entrance into school were never revaccinated. When all ages were considered, 56.9 per cent of the males and 57.9 per cent of the females gave a history of vaccination or of having had smallpox at some time in their lives. Three and 3.2 per cent respectively gave a history of a previous attack of the disease. In the rural areas included in the survey slightly more than 40 per cent of the adults gave a history of vaccination. In the cities with populations of 100,000 or more about 85 per cent of the adults had been vaccinated. Smaller cities and towns fell in between these two groups. The expected corollary with regard to the number of cases of smallpox was observed. Thus, 1.5 per cent of persons of all ages living in cities of more than a hundred thousand had a history of having had smallpox. In the towns under 5,000 and in rural areas there was a history of smallpox in 4.3 per cent. There is hence not so great a difference as might be expected from the

vaccination statistics, the explanation for which might be the relatively less frequent contact and possibly the greater frequency of cowpox in the farm population.

The eighteen states in which the surveyed population lived was divided into four geographic sections: the Northeast, the North Central, the South and the West. The Northeast appeared to be less well vaccinated than the other sections, but this conclusion is not necessarily statistically representative, since in some geographic sections many cities were included in the surveyed sample and in others the sample was more largely rural.

The record of all medical care, whether for illness or for preventive service, affords accurate data on the frequency of vaccinations during the twelve months of the morbidity study. The record for one year, however, although more accurate than the historical material, might indicate more frequent or less frequent vaccinations than the average over a period of years. Those vaccinations which were performed during this period were largely concentrated in a few communities. Twelve communities, or 10 per cent of the 119 localities, including 9 per cent of the surveyed families, contributed 74 per cent of vaccinations during the year. The other 26 per cent of vaccinations were done in fifty-five communities. Forty-four per cent of the communities, including 30 per cent of the families, contributed no vaccinations during the studied year. The twelve localities that contributed nearly three fourths of the vaccinations were all classed as having epidemics or threatened epidemics during the observation year. Thus, in the nine communities with the largest numbers of vaccinations in which smallpox was epidemic in the county, the vaccinations were highly concentrated in the same months in which the largest numbers of smallpox cases were reported. It is clearly indicated, therefore, that the presence of smallpox supplies a powerful motive for vaccination.

The vaccinal status of families attacked by smallpox was especially interesting. Of the sixty-seven persons in the fourteen households attacked during the twelve months study, forty-eight, or 72 per cent, had never been vaccinated or had previous smallpox. This compares with 43 per cent unvaccinated in the whole surveyed group. Twelve persons, or 18 per cent, had been vaccinated at some time; in ten of the twelve the vaccination was more than seven years previous to the study. Ten per cent had suffered attacks of smallpox prior to the study, but five of the seven cases of this group were in one family. Of the thirty-one children under 15 years of age in attacked households, none had been vaccinated. This compares with 41 per cent vaccinated in the whole surveyed group. The data suggest that the households which were attacked by smallpox during the study period had less vaccinal protection and more previous smallpox than the average for the whole surveyed group. There were seventeen cases of smallpox in the whole surveyed population, which is at an annual case rate of 44.1 per hundred

1. Collins, S. D.: History and Frequency of Smallpox Vaccination and Cases in 9,000 Families, Pub. Health Rep. 51: 443 (April 17) 1936.

thousand persons, as compared with a reported average annual rate for the United States of 37.1 for the years 1929 to 1930, a period approximating that covered by the survey. Sixteen of the seventeen cases occurred in persons with no history of vaccination or previous attack. This is a rate of 96 per hundred thousand of population, as compared with a rate of 5 per hundred thousand among persons previously vaccinated or immunized by attack. Since there were no smallpox deaths among these seventeen cases, the mortality data for the general population were used. In the continental United States there were 91,189 cases of smallpox reported in 1929 and 1930, an annual incidence rate of 37.1 per hundred thousand. The total of 347 deaths registered gives an annual mortality of 1.41 per million and a case fatality of 0.38 per cent. Evidently smallpox was not extremely malignant during these years.

The survey reported by Collins is especially significant in its indication that even now a relatively large proportion of the population is unvaccinated and that a further large number have had an insufficient number of revaccinations. The apparent present mildness of smallpox does not insure the permanent disappearance of the malignant variety, especially if any further increase in the nonimmune population occurs. Furthermore, an annual incidence rate of smallpox of 37.1 per hundred thousand, even when accompanied by a low mortality is, in view of the effectiveness of immunizing measures, a sufficient indication for unceasing vigilance and activity.

### SUNLIGHT AND HEALTH

The belief that sunlight exerts a beneficial effect on health is at present exceedingly popular. Its general endorsement by the public is visible during the summer months at the beaches and summer resorts. The growing tendency to continue "sun bathing" throughout the year is indicated by the increasing numbers of "sun lamps" available on the open market and the rather large numbers of these devices purchased by the American people for use in their homes. But what is the scientific knowledge regarding the effects of sunlight and of ultraviolet rays on health? Does such information indicate a need for excessive basking in the sun's rays or does it suggest that this practice is unnecessary or perhaps even undesirable? Laurens<sup>1</sup> has recently reviewed the available knowledge in this field.

First, which of the sun's rays actually pass through the outer layer of the skin into the deeper strata? Studies have shown that practically all the rays in the extreme ultraviolet range are reflected from or absorbed by the outer, horny layer of the skin, whereas a considerable proportion of the longer ultraviolet, the visible and the near infra-red rays are transmitted and

penetrate into the malpighian layer, the corium and, in the case of the visible and near infra-red rays, even the subcutaneous tissues. Thus, the horny layer of the skin apparently protects the deeper strata from the shorter ultraviolet rays. Pigment, which is present in the basal layer of cells of the stratum corium, apparently serves as a screen to prevent the "true skin" from receiving too much energy in the form of the longer ultraviolet rays.

The question of the effects of the rays that are transmitted by the stratum corneum into the deeper layers of the skin has received wide attention. Certain beneficial effects are well known, as, for example, the favorable influence of the ultraviolet rays on the assimilation of calcium and phosphorus and the resultant prevention or cure of rickets as the result of the formation of vitamin D in the skin. Favorable effects of moderate amounts of sunlight on the blood and circulation have also been described, particularly in increasing the platelet count in cases of idiopathic purpura haemorrhagica and as an adjuvant to diet and standard therapy in the treatment of secondary anemia. "Sunshine" carbon arc radiation has been alleged to cause a temporary decrease in both the systolic and the diastolic blood pressure in patients with essential hypertension. Natural sunlight, according to a number of authorities, hastens the healing of sluggish, indolent wounds by its local effect on the circulation of the blood and may be of benefit in tuberculosis of the skin (*lupus vulgaris*). Many believe that heliotherapy constitutes a valuable aid in the treatment of pulmonary tuberculosis. However, perhaps as many equally competent authorities feel that the results are "not likely to be spectacular and its omission not detrimental to the patient's best interest."

Harmful as well as beneficial effects may result from exposure to sunlight. Under certain conditions, as yet none too well defined, photosensitization may occur and the subject so sensitized may experience serious reactions on subsequent exposures to sunlight. A number of skin diseases, such as *urticaria solaris* and *lupus erythematoses discoides*, are probably due to this type of sensitization. Likewise it is well known that prolonged exposure to sunlight may cause not only inflammatory and degenerative changes in the skin but also systemic disturbances. One authority has stated that overexposure to sunlight may bring about damage to the central nervous system, especially the brain, as a result of heating of the skull.

Thus it is evident not only that sunlight may exert a beneficial influence on health but also that it may cause serious harmful effects. Laurens believes that the beneficial effects appear to be largely overemphasized. As far as is known, man actually requires only a relatively small amount of sunshine for the maintenance of normal health, and the greatest danger perhaps at the present time lies in too much exposure to sunlight rather than too little. Certainly, overindulgence in solar radiation should be avoided because of known possible

<sup>1</sup> Laurens, Henry: *Sunlight and Health*, *Scient. Monthly* 42: 312 (April) 1936.

ill effects. "Owing to the hypersensitivity of many infants and adults, caution should be used in the use of sunlight, both natural and artificial. Overindulgence, even in the normal, is foolhardy."

### THE DANGERS OF VENTRICULOGRAPHY

Ventriculography is defined by Pendergrass<sup>1</sup> as a procedure in which a series of roentgenograms is made of the head in several positions in the horizontal posture within one hour following the removal of all the available cerebrospinal fluid from the ventricles of the brain and its replacement by air. Since the procedure was first described by Dandy in 1918 a voluminous literature has developed, the general trend of which has been to stress the diagnostic value of ventriculography and to minimize the dangers. Several writers have pointed out complications that may follow ventriculography. At the Neurological Institute of New York a study of the dangers and mortality of ventriculography was made covering the five year period that ended with 1932. Riggs<sup>2</sup> says in the report of this study that ventriculography was performed 148 times for suspected brain tumors. During the first two years the posterior horn of one ventricle was punctured, the fluid was withdrawn, and then air was injected. Later Frazier's method was followed, whereby bilateral trephine openings were made, a needle was introduced into each posterior horn and air allowed to enter the ventricles as the fluid was evacuated by turning the head in various directions. During the last two years of the five year period changes were made in the site of the trephine openings, according to the technic described by Deery.

The most common mild symptoms that followed ventriculography in the 148 cases were headache, nausea, vomiting, and some rise in temperature. The dangerous symptoms that frequently followed consisted of stupor in forty-three cases, and changes in respiration, pulse, blood pressure and temperature; twelve of these patients died. In the fatal cases there was usually a progressive stupor, with a terminal rise in temperature to about 107 F. Three patients died of acute respiratory failure, one being kept alive for several hours by artificial respiration. The onset of the stupor varied from immediately after the ventriculography to the third day. The dangerous symptoms that developed usually appeared within the first ten hours, but in the patients who succumbed following ventriculography the dangerous symptoms began within the first eight hours in most of the cases. The forty-three patients who developed dangerous symptoms, including the twelve who died, comprise two groups: (a) those who were acutely ill with advanced signs of brain tumor and were stuporous before the introduction of air and (b) those

who were not stuporous and were generally in fair condition before ventriculography was performed. Of the twelve patients who died, eight belonged to the second group; of the thirty-one patients who had dangerous symptoms but recovered, twenty-three belonged to the second group.

Fatalities following ventriculography, the New York investigators concluded, are usually due to the profound effects on the pressure conditions within the cranial cavity of the removal of fluid and the introduction of air and are rarely due to hemorrhage into the ventricles. There is a delicate balance, they say, in most instances, and particularly in subcortical growths, in the pressure conditions within the cranial chamber, which is profoundly disturbed when fluid is removed and air allowed to enter the ventricles. Ventriculography is especially dangerous in patients having subcortical tumors located deep enough to make pressure on the third ventricle and the brain stem. Furthermore, the relations of the various parts of the brain to one another are probably altered during the evacuation of fluid and the entrance of air into the ventricles. The report of this investigation seems to show that death or dangerous symptoms occurred less often when one trephine opening was made and when fluid was removed gradually and air injected slowly.

In the treatment of the forty-three patients who developed dangerous symptoms after ventriculography, the use of caffeine and hypertonic dextrose solution intravenously was rarely of any benefit; among those who died, puncture of the ventricle to evacuate the air had practically no beneficial effect. However, in 78 per cent of the patients who had dangerous symptoms but recovered there was a definite beneficial effect from the release of the air in the ventricles. The major operation for the brain tumor probably should follow the ventriculography just as soon as the x-ray films have been developed and a decision has been made as to the location of the tumor. This rule has been adopted in many neurologic clinics.

Masson<sup>3</sup> reported another study from the Neurological Institute of New York concerning the disturbances in vision after ventriculography. Six cases of temporary blindness occurred among 100 consecutive cases. One of these patients had reduction in visual acuity before the ventriculography, but the other five patients had either normal or slightly reduced visual acuity before the ventriculography. The vision of all these six patients, however, was regained in from twenty-one to seventy-two hours. Four of them were operated on during the blind period and the loss of sight in them averaged forty-five hours; in two patients who were not operated on during the blind period, the blindness lasted twenty-one and twenty-six hours. Masson and his associates offer no satisfactory expla-

1. Pendergrass, Eugene: Indications and Contraindications of Encephalography and Ventriculography, *J. A. M. A.* 96: 408 (Feb. 7) 1931.

2. Riggs, H. W.: The Dangers and the Mortality of Ventriculography, *Bull. Neurol. Inst. New York* 3: 210 (June) 1933.

3. Masson, C. B.: The Disturbances in Vision and in Visual Fields After Ventriculography, *Bull. Neurol. Inst. New York* 3: 190 (June) 1933.

nation for the temporary blindness, but believe it was in some way connected with the puncture of the brain.

Since practically all patients with brain tumors die unless operated on, and since location of the tumor is essential to proper operative procedures, ventriculography is in some cases an indispensable diagnostic procedure. It should be used, however, only in patients in whom localization of the tumors is impossible by clinical means, and special care should be taken in patients whose tumor is causing pressure on the third ventricle or the brain stem.

## Current Comment

### OXYGEN AND SEIZURES OF EPILEPSY

In the majority of patients having frequent attacks of petit mal, seizures can be consistently induced by anoxemia. Analyses of the respired air of epileptic patients during an attack have shown that the oxygen content is decreased from the normal of approximately 14 per cent to from 8 to 12 per cent. Unconsciousness occurs in normal persons when the oxygen content is reduced to about 7 per cent. As a low oxygen tension precipitates seizures in epileptic patients, a high oxygen tension might prevent or at least lessen the frequency of attacks. This possible effect of oxygen has been recently subjected to experimental study.<sup>1</sup> The patients used for the investigation were three young women who were having numerous attacks of petit mal daily and with whom experience over a period of years had demonstrated that seizures invariably followed either the breathing of an oxygen-poor mixture or hyperpnea. The patients, along with the observers, were placed in a gas-tight chamber and were subjected to pressures ranging up to 4 atmospheres for periods of from three and one-half to five hours. The number of attacks of petit mal which occurred during these periods were compared with those during an equal interval on the same day while the patients were exposed to normal atmospheric pressure. The data thus obtained showed that the number of spontaneous attacks was decreased an average of 45 per cent during the periods of increased pressure. Similar results were obtained in studies on the effect of increased oxygen tension on seizures induced by hyperpnea. As the pressure of oxygen was increased in the inspired gas mixture, the time required for the precipitation of a seizure was correspondingly increased. In one patient a twenty-fold increase in oxygen tension resulted in a fivefold increase in the amount of overventilation required to produce an attack. These observations seem to indicate a distinct relation between the oxygen content of respired air and seizures of petit mal. The exact nature of this relation is as yet not known but it is possible that some alteration of the acid-base balance of the blood is involved. It is well known that patients remain seizure free while in a state of acidosis and perhaps the administration of oxygen under the conditions employed may have favored the development of a similar condition.

1. Lennox, W. G., and Helmke, A. R.: Effect of Increased Oxygen Pressure on the Seizures of Epilepsy, *Arch. Neurol. & Psychiat.* 25: 782 (April) 1936.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

### CALIFORNIA

**Noise Abatement Committee.**—Mayor Rossi has appointed a committee of physicians, engineers, lawyers, civic organization officials and other lay persons to study noise abatement in San Francisco. The department of health of San Francisco, working through its division of industrial hygiene, has made certain recommendations to the newly appointed committee, following a two weeks intensive survey with special noise detecting instruments.

**Low Infant Mortality Rate.**—California recorded the lowest infant mortality rate on record in 1935, 49.5 per thousand live births. Of 3,973 infant deaths recorded, 2,546 were among white infants, giving a white infant mortality rate of 39.5. On the other hand, there were 1,184 deaths of Mexican infants recorded, giving a racial infant death rate of 100.7. Ten per cent of Mexican infants born in California last year died during the first year of life, while less than 4 per cent of white infants died during the first year of their existence, according to the state health department.

**State Medical Election.**—Dr. Howard Morrow, San Francisco, was chosen president-elect of the California Medical Association at the recent meeting in Coronado, and Dr. Edward M. Pallette, Los Angeles, was installed as president. The next annual session of the association will be held in Del Monte. A resolution was passed opposing the opening of county hospitals to nonindigent persons. It is expected that an initiative measure authorizing this extension of hospital service will appear on the ballot in the November election. The association also took the position that roentgen technic, including laboratory services, constitute medical service and therefore should be under the control of the medical profession.

**Public Health in University Program.**—At the Institute of Government, June 15-19, sponsored by the University of California at Los Angeles, the program for the public health section, under the direction of Ira V. Hiscock, C.P.H., professor of public health, Yale University School of Medicine, New Haven, will include the following speakers:

- Dr. Hiscock, Trends in Public Health and Methods of Measuring Needs and Effectiveness of Public Health Service.
- Dr. Fred T. Foard, San Francisco, regional consultant, U. S. Public Health Service, The Social Security Act and Public Health.
- Dr. Edith P. Sappington, San Francisco, regional consultant, Children's Bureau, The Social Security Act and Maternity and Child Hygiene.
- C. V. Duckworth, assistant director, state department of agriculture, Bovine Tuberculosis and Undulant Fever.
- Dr. Jacob C. Geiger, health officer of San Francisco, Milk Inspection.

### CONNECTICUT

**State Medical Meeting and Election.**—Dr. Daniel C. Patterson, Bridgeport, was elected president of the Connecticut State Medical Society at its annual meeting in Hartford, May 20-21. Vice presidents are Drs. Thacher W. Worthen, Hartford, and Hugh B. Campbell, Uncas-on-Thames, Norwich, and the treasurer is Dr. James R. Miller, Hartford. It was agreed to establish a full time office for the society in New Haven, to be under the direction of Dr. Creighton Barker as administrative secretary. Dr. Charles W. Comfort Jr., New Haven, under the new arrangement becomes legislative secretary, and Dr. Stanley B. Weld, Hartford, secretary on scientific work. Dr. Weld will also be editor of the quarterly bulletin now planned by the society. The address of the new office is 258 Church Street, New Haven, and Miss Margaret Capello is the secretary. Out of state speakers on the program included:

- Dr. Adrian S. Taylor, Clifton Springs, Clinical Aspects of Thyroid Disease.
- Dr. Stafford L. Warren, Rochester, N. Y., Results of Comparative Doses on Human Tumors Using Fever and Roentgen Radiation.
- Dr. Emil Novak, Baltimore, Use and Abuse of Endocrinology in Gynecology.
- Dr. Arthur P. Noyes, Howard, R. I., Relationship of Psychiatry to Medicine.
- Dr. George C. Andrews, New York, Pastular Bacterids of the Hands and Feet.
- Dr. Conrad Berens, New York, Clinical Considerations of Ocular Fatigue.
- Dr. Eliezer Ross Faulkner, New York, Review of Operative Technic in Nose and Throat Surgery.

## DELAWARE

**Medical Art Exhibit.**—The Delaware Academy of Medicine participated in the second annual Delaware Art Week, May 3-10, in Wilmington, by displaying in the library an exhibit showing "Art as Applied to Medicine."

**Health at Wilmington.**—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended May 30, indicate that the highest mortality rate (17.7) was for Wilmington. For the group of cities as a whole it was 10.9. The mortality rate for Wilmington for the corresponding period last year was 10.8 and for the group of cities, 11.5. The annual rate for eighty-six cities for the twenty-two weeks of 1936 was 13.3 as against a rate of 12.4 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

## DISTRICT OF COLUMBIA

**Medical Bills in Congress.**—S. 4195 has passed the Senate, directing the Commission on Licensure to Practice the Healing Art to issue a license to Dr. Ralph Charles Stuart. A similar House bill, H. R. 11695, has been favorably reported to the House.

**Society News.**—The Washington Ophthalmological Society was addressed, May 4, among other speakers, by Deane B. Judd, Ph.D., of the National Bureau of Standards on "Color Blindness and Anomalies of Vision" and Major Raymond O. Dart of the Army Medical Museum on "Ocular Tumors."

## FLORIDA

**Society News.**—Dr. Kenneth A. Morris, Jacksonville, addressed the Duval County Medical Society, May 5, on "Surgery in the Treatment of Pulmonary Tuberculosis."—At a meeting of the Lake County Medical Society, April 3, Dr. Spencer A. Folsom, Orlando, discussed hyperinsulinism.—The Pinellas County Medical Society was addressed in St. Petersburg, May 1, by Dr. George E. Miller, on influenza. Dr. Orville N. Nelson, Bay Pines, discussed head injuries before the society, May 15.

## GEORGIA

**Personal.**—Dr. William D. Jennings Jr., Augusta, has been appointed to the newly created position of police and fire surgeon.

**Society News.**—The Fulton County Medical Society was addressed in Atlanta, June 4, by Drs. Allen H. Bunce on "Diagnosis and Medical Treatment of Gallbladder Disease"; John Shelton Horsley, Richmond, Va., "Surgical Aspect of Cancer," and Roy R. Kracke, Emory University, "Leukopenic Diseases." Dr. Horsley also addressed the second anniversary meeting of the Atlanta Cancer Clinic at the Georgia Baptist Hospital, June 4-5.—At a meeting of the Second District Medical Society in Quitman, April 10, speakers included Drs. John C. Keaton, Albany, on "Transurethral Prostatic Resection"; William G. Hamm, Atlanta, "Harelips and Cleft Palates," and Henry M. Moore, Thomasville, "Tobacco Amblyopia."—The Colquitt County Medical Society was addressed in Moultrie, April 7, by Dr. James A. Redfern, Albany, on "Electrocardiograph and Its Use in the Diagnosis of Various Heart Conditions," and Dr. Thomas H. Chesnutt, Moultrie, diphtheria.—A symposium on infections of the genito-urinary tract was presented before the Coffee County Medical Society in Douglas, April 28, by Drs. Bascom O. Quillian and Thomas H. Clark, both of Douglas.—Dr. Job C. Patterson read a paper before the Randolph County Medical Society in Cuthbert, May 7, on "Abdominal Pain—Differential Diagnosis."—Among others, Dr. Everett L. Bishop, Atlanta, addressed the Macon Medical Society of Bibb County, April 7, on "Bone Tumors and Their Treatment by Radiation or Surgery." Dr. Robert C. Goolsby Jr., Macon, addressed the society, May 7, in Macon, on "Care of the Sick and Injured in Storm Devastated Areas."

## IDAHO

**Annual Registration Due July 1.**—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1, with the department of law enforcement, and at that time to pay a fee of \$2. If a licentiate has not paid the annual registration fee by October 1, his license can be canceled but will be restored

within five years thereafter on payment of the delinquent fees and a \$10 penalty. If a license has been canceled for more than five years, it can be reinstated only on the payment of \$25 and on the licentiate's passing an examination, the nature of which shall be determined by the department of law enforcement.

## ILLINOIS

**State Medical Election.**—Dr. Rollo K. Packard, Chicago, was named president-elect of the Illinois State Medical Society at its recent annual meeting in Springfield, and Dr. Rolland L. Green, Peoria, was installed as president. Vice presidents are Drs. Richard F. Herndon, Springfield, and John W. Long, Robinson; Drs. A. J. Markley, Belvidere, and Harold M. Camp, Monmouth, are treasurer and secretary respectively. The next annual session will be held in Peoria.

## Chicago

**Personal.**—Dr. Walter Wile Hamburger has resigned as clinical professor of medicine at Rush Medical College, University of Chicago, effective July 1.—Dr. G. Howard Gowen has been appointed assistant epidemiologist to the state department of health, effective July 1.

**Bust of Dr. Carlson Unveiled.**—A bust of Dr. Anton J. Carlson, professor and chairman of the department of physiology, University of Chicago, was unveiled, June 1, in the hall of the physiology building, the gift of friends and students of Dr. Carlson. The bust was presented to the university by



Dr. Arno B. Luckhardt, also professor of physiology at the school, and Frederic C. Woodward, LL.D., vice president, gave the speech of acceptance. Dr. Carlson was born in Sweden in 1875. He came to America in 1891, taking his degree of doctor of philosophy at Leland Stanford University in California, in 1902. After two years of teaching and research at Stanford and Carnegie Institution he joined the University of Chicago in 1904 as assistant professor of physiology and in 1914 was made professor. In 1929 he received the title of

Frank P. Ilion distinguished service professor. Dr. Carlson's research has included among others the following subjects: rate of conduction of the impulse in nerves; the nature of the heartbeat; lymph formation and salivary secretion; comparative physiology of the circulation; comparative physiology of the thyroid and parathyroid; physiology of the alimentary tract and of the visceral sensory nervous system.

## INDIANA

**Child Health.**—A new program of child health is to be instituted in public schools of the state as a part of Indiana's activities in connection with the federal government's social security plan. Dr. Thurman B. Rice, assistant director of the state health department, will be in charge of the program, with the title of director of physical and health education.

**Changes in Health Officers.**—The monthly bulletin of the Indiana Division of Public Health announces the following changes in health officers:

Dr. Elmer D. Johns, Zionsville, succeeding Dr. Lawrence S. Bailly as town health officer.  
Dr. Camden G. Bothwell, Martinsville, succeeding Dr. George B. Breedlove as health officer of Morgan County.  
Dr. James L. Denaut, health officer of Hamlet.  
Dr. Clyde J. Munns, Newburgh, succeeding Dr. John T. Samples as health officer of Warrick County.

**Physicians Honored.**—Drs. William N. Wishard, professor and head of the department of genito-urinary surgery, and Charles E. Ferguson, emeritus professor of obstetrics, Indiana University School of Medicine, Indianapolis, were guests of honor at a banquet, April 29, given by the Pi chapter of Phi Rho Sigma Fraternity. They are the oldest alumni of the local



chapter of the fraternity, Dr. Wishard having graduated from Indiana Medical College in 1874 and Dr. Ferguson in 1892. Dr. Wishard, 84 years old, is still in active practice and Dr. Ferguson, now 79, retired from teaching in 1920. Dr. Roscoe L. Sensenich, South Bend, president of the state medical association, gave an address at the banquet, and Dr. Ezra Vernon Hahn, Indianapolis, was toastmaster.

**Resolution on Change in Control of Veterans' Medical Service.**—Members of the Wade H. Williamson Post, number 241, American Legion, Patriot, recently adopted a resolution urging that the present system of handling veterans' affairs through the Veterans' Administration be replaced by a pension system with local examining boards as the basic unit. The resolution recommends that all money expended by the federal government for hospitals or for hospitalization be given for the maintenance and support of local hospitals or paid in cash for the disabled veteran, and that he be allowed his constitutional right to select the hospital and physician of his own choice and pay his own bill. The resolution, submitted by Dr. Miles F. Daubenheyer, suggests that these examining boards be composed of three physicians with one lay member to determine the nature and degree of disability of veterans.

### IOWA

**Tribute to Physicians.**—Drs. William Jepson and Frank J. Murphy, Sioux City, were guests of honor at a dinner meeting of the Woodbury County Medical Society, May 26. Dr. Jepson, who has completed fifty years in the practice of medicine, was presented with a watch. Dr. Murphy is now in his fiftieth year of practice. Dr. Charles T. Maxwell, Sioux City, president of the county medical society, presided, and speakers included the following physicians: Kellogg Speed, Chicago, who discussed fractures of the spine, and William R. Whiteis, Iowa City; Peter H. Salter, Norfolk, Neb.; Joseph C. Ohlmacher, Vermillion, S. D.; Edward M. Myers, Boone; Howard L. Beye, Iowa City; Ewen M. MacEwen, Iowa City; Walter L. Bierring, Des Moines, and Prince E. Sawyer, Sioux City.

**Society News.**—The Des Moines Academy of Medicine and Polk County Medical Society were addressed, May 26, by Drs. Arthur W. Erskine, Cedar Rapids, on "Cancer Survey in Iowa"; Lester G. Erickson, Dubuque, "Early Recognition of Carcinoma of the Stomach," and Alva P. Stoner, "Rôle of Fibrous Tissue in the Repair of Hernia, with Special Reference to Injection Therapy."—Dr. Alice M. Humphrey Hatch, Des Moines, was chosen president of the State Society of Iowa Medical Women at its annual meeting. Life memberships in the society were conferred on the following physicians: Sophie H. Scott, Nello P. S. Noble, Jeannette Dean Throckmorton, Leone Morden Scruby, all of Des Moines; Eppie S. McCrea, Eddyville; Emma Jewel Neal, Cedar Rapids; Jane D. McIntosh Wright, Clear Lake; Rosabell A. Butterfield, Indianola; Mary K. Heard, St. Petersburg, Fla., and Pauline M. Leader, Clarinda.—Dr. Robert Q. Rowse, Sioux City, was elected president of the Iowa Clinical Surgical Society, April 25.

### KANSAS

**Fifty Years of Practice.**—Drs. William E. Ham, Beattie, and Robert Hawkins, Marysville, were guests of honor at a dinner given by Dr. John W. Randell at his home in Marysville recently in recognition of their completion of fifty years in the practice of medicine. Dr. Hawkins was unable to be present on account of illness in his home. Speakers in a symposium on tuberculosis were Drs. Harold E. Petersen, Earl M. Shores and Jacob Kulowski, St. Joseph, Mo. Dr. Ham graduated from Rush Medical College in 1882 and Dr. Hawkins in 1885.

### KENTUCKY

**Personal.**—Dr. Alfred F. Smith, Georgetown, has been appointed health officer of Greenup County, succeeding Dr. Carl M. Gambill, who held the position three years.—Dr. Anton J. Carlson, Chicago, delivered the annual Alpha Omega Alpha address to the University of Louisville School of Medicine, April 17, on "Observations on Science and Medicine in Russia and China."

**Society News.**—The committee on graduate courses in diseases of children of the Kentucky State Medical Association began a course at the Children's Free Hospital, Louisville, April 22, to continue each Wednesday for ten weeks. Interesting cases in the hospital are presented and newer methods of treatment discussed. Dr. Philip F. Barbour, Louisville, is in charge.—At the final meeting for the year of the Jefferson County Medical Society, Louisville, a discussion of the

management of epidemics was presented by Drs. Fred W. Caudill, who spoke on epidemic meningitis; Ben W. Smock, typhoid, and Samuel J. Brownstein, diphtheria. At the meeting, June 1, speakers were Drs. Karl D. Winter, on "Cautery Pneumonectomy for Lung Abscess"; Rettig A. Griswold and Edward M. Drissen, "Stab Wounds of the Heart"; Armand E. Cohen and Maurice G. Buckles, "Modern Treatment of Bronchial Asthma."—Dr. Roy Glenwood Spurling, Louisville, addressed the Louisville Surgical Society, June 5, on "Spinal Cord Tumors."

### MASSACHUSETTS

**Personal.**—Dr. John A. Foley has been named clinical professor of medicine at Boston University School of Medicine and Dr. William Reid Morrison, clinical professor of surgery.

**Milk Company Indicted.**—The *New England Journal of Medicine* reports that the chief officials of the Whiting Milk Companies have been indicted by a Suffolk grand jury for distributing in large quantities, as fresh cow's milk, a grossly adulterated substance. During the milk shortage of the March floods, according to the contention of the Boston Health Department, the Whiting Milk Companies conspired to manufacture a product from an inferior grade of Dutch skimmed milk powder and rancid South American butter; over 100,000 quarts was sold to chain stores in the poorer districts of Boston as pure milk. The journal points out that the Whiting Milk Companies were convicted in 1932 of adding a foreign substance to milk and paid a fine.

**Dr. Russell Awarded Medal.**—Dr. Frederick F. Russell, lecturer in preventive medicine and hygiene and epidemiology, Harvard Medical School, Boston, and formerly director of the International Health Division of the Rockefeller Foundation, has been awarded the Public Welfare Medal of the National Academy of Sciences. Dr. Russell retired Sept. 1, 1935, as director of the International Health Division. From 1920 to 1923 he was director of the public health laboratory service of the International Health Board. From 1923 until his resignation in 1935 he was general director of the board. The Public Welfare Medal is provided through the Marcellus Hartley Fund, a trust established in 1913-1914 through a gift from Mrs. Helen Hartley Jenkins in memory of her father, Marcellus Hartley.

### MINNESOTA

**Lectureship in Honor of Dr. Lyon.**—The establishment of the Elias Potter Lyon Medical Lectureship at the University of Minnesota has been announced as a tribute to Dr. Lyon, dean of the medical school, who is retiring from active service at the close of the present academic year. The fund for this purpose is to be raised through subscriptions by alumni, faculty, students and friends. Contributions should be sent to Mr. William T. Middlebrook, comptroller, University of Minnesota, Minneapolis.

**Society News.**—At a meeting of the Minnesota Academy of Ophthalmology and Otolaryngology in Rochester, May 5, speakers were Drs. Henry L. Williams Jr. on "Analysis of Cases of Petrositis"; Gordon B. New, "Benign Tumors of the Larynx"; William L. Benedict, "Tumors of the Orbit"; Hugo L. Blair, "Physiologic Factors in Perimetry," and Philip S. Hench, "Fever Therapy." All are of Rochester.—Dr. Robert G. Green, Minneapolis, discussed "Epizootiology of Tularemia" before the Minnesota Academy of Medicine, May 13.

**Personal.**—Dr. William J. Mayo, Rochester, delivered the commencement address at Notre Dame University, South Bend, Ind., June 7; both William J. and Charles H. Mayo received honorary degrees on this occasion.—Dr. John A. Malmstrom has resigned as health officer of Virginia to return to private practice.—Dr. Pierre C. Pilon, Paynesville, was guest of honor at a dinner recently, given in recognition of his completion of fifty years in the practice of medicine.—Dr. Anthony J. Spang has been appointed medical superintendent of the St. Louis County Hospital at Buhl, succeeding Dr. Oliver E. Sarff.

### MISSISSIPPI

**List of Automobile Victims.**—The state board of health has published a pamphlet dramatizing deaths from automobile accidents, attributing them not to "accidents" but to specific causes. The pamphlet points out that recklessness, carelessness, foolishness and drunkenness are the causes. In addition to statistics, it lists the names, classified according to counties, of persons who died in Mississippi in 1935 in automobile accidents or as the result of automobile accidents. Motor vehicle deaths in Mississippi have increased 83 per cent in the past four years.

## NEBRASKA

**Personal.**—Dr. Clarence S. Moran has recently been promoted to be assistant professor of pathology at Creighton University School of Medicine, Omaha, and Dr. William Howard Schmitz, associate professor of urology.—Dr. Inez C. Philbrick, Lincoln, has resigned after many years as resident physician for women at the University of Nebraska.—Dr. Archibald R. McIntyre, professor of physiology and pharmacology at the University of Nebraska College of Medicine, Omaha, has been appointed chairman of the department.

## NEW MEXICO

**Bureau of Child Welfare.**—In a news item published in *THE JOURNAL*, May 2, under the heading "Child Welfare Extended with Federal Funds," the state bureau of child welfare was mentioned as a division of the state department of public health. The bureau of child welfare and the bureau of public health are independent bureaus.

## NEW YORK

**Personal.**—Dr. Lawrason Brown, Saranac Lake, received the honorary degree of doctor of science at the annual commencement of the Medical College of Virginia, Richmond, June 2.—Dr. Jacob E. K. Morris, Olean, was honored with a banquet given by his colleagues and other friends recently to celebrate his golden anniversary in the practice of medicine.

**Annual Public Health Conference.**—The annual conference of health officers and public health nurses will be held at the Grand Union Hotel at Saratoga Springs, June 23-25. Among physicians on the program are:

- Dr. Floyd S. Winslow, Rochester, president of the Medical Society of the State of New York, Specialization in Public Health.
- Dr. Rufus I. Cole, New York, Pneumonia Control.
- Dr. Warren T. Vaughan, Richmond, Va., Hay Fever Pollen Reactions—To What Extent Are They Preventable?
- Dr. Paul A. O'Leary, Rochester, Minn., What the Treatment of Syphilis Accomplishes.

One session will be devoted to a symposium on tuberculosis with the following speakers: Drs. Max Pinner, Oneonta; James Burns Amberson Jr., New York, and Ethan Flagg Butler, Ithaca, and Mrs. Violet Hodgson, R.N., supervisor of tuberculosis outpatient nursing, state department of health.

## New York City

**Society News.**—The Public Health Association of New York City was organized May 18, made up of New York members of the American Public Health Association.—The Medical Society of the County of Queens held a joint meeting with the Queens County Bar Association, May 26, with the following speakers: Mr. Lloyd P. Stryker, formerly counsel to the Medical Society of the State of New York, on "The Doctor, the Law and the State"; Alexander O. Gettler, Ph.D., professor of toxicology, New York University College of Medicine, "The Role of Toxicology in the Medicolegal Autopsy"; Charles P. Sullivan, district attorney, Queens County, "Crime Among Juveniles," and Dr. Jacob Werne, assistant county medical examiner, "Autopsy Experiences in the Evaluation of Trauma."—Speakers at a meeting of the New York chapter of the Pan American Medical Association, May 27, were Drs. William Wayne Babcock, Philadelphia, on "Diagnosis and Treatment of Malignancy of the Intestinal Tract"; Frederick M. Allen, "Management of Diabetic Patients Requiring Abdominal Surgery," and William A. Kellogg, "Vesico-Intestinal Fistula."—Drs. Irving Sherwood Wright and Allen O. Whipple addressed the Medical Society of the County of Kings, May 19, on "Present Status of Peripheral Vascular Disease: Diagnosis and Treatment" and "Studies in the Combined Clinic on Splenic Disease" respectively.—Dr. John F. Erdmann addressed the New York Surgical Society, May 13, on "Tumors of the Uterus, with Special Reference to Fibroids."

## NORTH CAROLINA

**Society News.**—Dr. James W. Tankersley, Greensboro, was elected president of the North Carolina Academy of Surgery at the annual meeting in Asheville recently.—At the quarterly meeting of the Fourth District Medical Society in Goldsboro, April 28, speakers were Drs. Paul V. Anderson, Richmond, Va., on "Facts and Fallacies Concerning Insanity"; Henry B. Ivey and Corbett E. Howard, Goldsboro, on "X-Ray Study of Breast Lesions," and Richard S. Anderson, Rocky Mount, "Carcinoma of the Jejunum."—Dr. Tibor de Cholnoky, New York, addressed the Buncombe County Medical Society, Asheville,

April 20, on "Cancer and Electrosurgery."—Dr. Leroy J. Butler, Winston-Salem, was elected president of the North Carolina Pediatric Society at the annual meeting in Asheville, May 6.

## NORTH DAKOTA

**State Medical Election.**—Dr. Edwin L. Goss, Carrington, was chosen president-elect of the North Dakota Medical Association at the annual meeting in Jamestown in May, and Dr. William A. Gerrish, Jamestown, was installed as president. Drs. William H. Long, Fargo, and Lee B. Greene, Edgeley, were elected vice presidents and Dr. Albert W. Skelsey, Fargo, was reelected secretary. The 1937 meeting will be held in Grand Forks.

## OHIO

**"Alumni Day Clinics" at Cincinnati.**—Alumni of the University of Cincinnati College of Medicine were guests of the college for a program of clinics at the Cincinnati General Hospital, June 4. In charge of the clinics were Drs. Mont R. Reid, Burr Noland Carter, Marion A. Blankenhorn, Julien E. Benjamin, Robert R. MacDonald and Glenn E. Cullen, Ph.D. The afternoon was devoted to visits to the university's research laboratories. The annual alumni banquet was held at the Netherland-Plaza Hotel.

**Personal.**—Dr. John L. Jones, Medina, health commissioner of Medina County, has been appointed special investigator in the bureau of child hygiene of the state department of health. He will make a detailed investigation of maternal deaths in cooperation with the Hospital Obstetric Society of Ohio, it is reported.—Dr. Tom Douglas Spies has been promoted from assistant to associate professor of medicine at the University of Cincinnati College of Medicine and Dr. Eugene B. Ferris Jr., from instructor to assistant professor of medicine.

**Sectional Meeting.**—The Northwestern Ohio Medical Association held its ninety-second annual meeting at Findlay, June 2. After a golf tournament at the Findlay Country Club, the following program was presented:

- Dr. Thomas K. Brown, St. Louis, Puerperal Infections.
- Dr. John T. Murphy, Toledo, Use of X-Rays in the Treatment of Cancer of the Breast.
- Dr. John A. Toomey, Cleveland, A Critical Evaluation of Recent Advances in Contagious Diseases.
- Dr. Fred W. Rankin, Lexington, Ky., Modern Treatment of Cancer of the Lower Gastro-Intestinal Tract.
- Dr. Roy W. Scott, Cleveland, Diagnosis and Management of Patients with Cardiovascular Disease.
- Dr. Stanley R. Woodruff, Jersey City, N. J., Modern Methods of Combating Urinary Infections.

Dr. Amos O. Squire, Ossining, N. Y., former chief physician at Sing Sing Prison, gave an address at the dinner in the evening at the Elks' Club.

## PENNSYLVANIA

**Personal.**—Dr. Lewis C. Rowles, Clearfield, has been appointed medical director of Clearfield County to succeed Dr. Horatio L. Woodside, Bigler, who resigned in October 1935.—Dr. Albert M. Sittler, Bowmanstown, celebrated in April the fiftieth anniversary of his graduation from Jefferson Medical College, Philadelphia.—Dr. Arthur P. Noyes, Howard, R. I., has been appointed superintendent of the Norristown State Hospital, succeeding Dr. Annie R. Elliott.

**Graduate Assembly in Harrisburg.**—The Harrisburg Academy of Medicine presented its third graduate medical assembly at the Penn-Harris Hotel, May 7. Speakers were:

- Dr. Thomas Fitz-Hugh Jr., Philadelphia, Management of Certain Blood System Diseases.
- Dr. William F. Rienhoff Jr., Baltimore, Carcinoma of the Lung.
- Dr. Samuel A. Levine, Boston, Bedside Recognition and Treatment of Cardiac Irregularities.
- Dr. Joseph F. McCarthy, New York, Interrelation of Urology with General Medicine.
- Dr. Alan G. Brown, Toronto, Common Errors in Diagnosis and Treatment in Diseases of Children.
- Dr. Chevalier Jackson, Philadelphia, Diseases of the Larynx—Benign and Malignant.

## Philadelphia

**Meeting of Undergraduate Association.**—The twenty-eighth annual meeting of the Undergraduate Medical Association of the University of Pennsylvania School of Medicine was held May 7. Fourteen students presented papers. Addresses were made by the following guests: Drs. George R. Minot, Boston, on "Anemia and Its Relation to the Gastro-Intestinal Tract"; Derek Denny-Brown, neurologist to St. Bartholomew's Hospital, London, "Innervation of the Bladder and Vesical Sphincters" and Carl F. Schmidt, "Intrinsic Control of Cerebral Circulation."

**Dr. Burr Honored.**—Friends of Dr. Charles W. Burr gave him a testimonial dinner, April 25, at the Union League on the occasion of the fiftieth anniversary of his graduation in medicine and his election to the presidency of the Medical Alumni Society of the University of Pennsylvania. Dr. Daniel J. McCarthy was toastmaster. Eight classmates of Dr. Burr attended the dinner, as follows: Drs. John F. Culp, Harrisburg; Elliston J. Morris, William E. Parke, Charles J. Homan, Otto A. Rath, Paul J. Sartain, William H. Teller and William Zentmayer, all of Philadelphia.

**Antinnoise Ordinance Adopted.**—The city council of Philadelphia has adopted a noise abatement ordinance prepared by a special committee of the Philadelphia County Medical Society. The new ordinance prohibits sounding of automobile horns "except when reasonably necessary for the prevention of accidents," building operations at night except by special permit, the use of sound devices by peddlers, "unnecessary noise" in handling trash, ash and garbage cans, and the use of gongs, sirens or exhaust whistles on any vehicles except those of the police and fire bureaus, public utilities and hospitals. Loud playing of radios in homes or in front of stores is also among the specific noises forbidden in the ordinance. Penalty for the first offense is a \$10 fine, for the second \$25 and for the third \$50. Prison sentence may be imposed for failure to pay the fine.

### SOUTH DAKOTA

**State Medical Election.**—Dr. Earle A. Pittenger, Aberdeen, was chosen president-elect of the South Dakota State Medical Association at the annual meeting at Sioux Falls, May 4-8, held as a part of the Inter-Allied Professional Association. Dr. James L. Stewart, Nemo, was installed as president and Dr. John F. D. Cook, Langford, was elected vice president. Dr. Cook will continue to serve as secretary for another year to fill out his term. Next year's meeting will be in Rapid City. Dr. Burt A. Dyar, Pierre, was elected executive secretary for the interallied council.

### TENNESSEE

**Society News.**—Dr. Ralph O. Rychener, Memphis, was elected president of the Tennessee Academy of Ophthalmology and Otolaryngology at the annual meeting in Memphis, April 13. Dr. John M. Lee, Nashville, was made president of the Tennessee Pediatric Society, which met April 14.—At the meeting of the Dyer, Lake and Crockett Counties Medical Society, May 6, speakers were Drs. David H. James and Joseph H. Francis, Memphis, on medical and surgical aspects, respectively, of megacolon; Jesse Paul Baird, Dyersburg, clinical types of ascites, and Ernest G. Kelly, Memphis, intestinal obstruction.—Dr. Marvin M. Cullom, Nashville, addressed the Davidson County Medical Society, Nashville, May 5, on "Chronicity of Sinus Disease: Its Relation to Middle Ear Infections, Deafness and Constitutional Diseases."—Dr. Russell B. Howard, Clinton, addressed the Campbell County Medical Society, Jellico, April 30, on modern therapy of syphilis.—The Chattanooga and Hamilton County Medical Society met at Pine Breeze Sanatorium, May 7, with Drs. John Alexander Stewart, Eugene A. Gilbert and James L. Hamilton speaking on various phases of tuberculosis.—Dr. Leroy E. Coolidge, Greeneville, addressed the Greene County Medical Association, May 5, on diagnosis and treatment of goiter.

### TEXAS

**Incubator Babies at Exposition.**—A hospital for incubator babies is a feature of the Texas Centennial Exposition, Dallas, which opened June 6. The hospital is sponsored by the Woman's Auxiliary of the Bradford Memorial Hospital and Dallas Pediatric Society. The society invites all physicians to make their headquarters in this exhibit, where a special reception room has been arranged. The physician's personal card at the door will admit him, it is announced.

### VIRGINIA

**Hospital Meeting.**—The Tri-State Hospital Association, composed of the state associations of the Carolinas and Virginia, held its annual meeting at Old Point Comfort in April. Dr. Lewis E. Jarrett, Richmond, was reelected president of the Virginia association and Dr. Moir S. Martin, Mount Airy, was elected president of the North Carolina association. South Carolina will name its officers later.

**Society News.**—Speakers at a meeting of the Fauquier County Medical Society, Warrenton, April 30, included Drs. John A. Gibson, Leesburg, on "Doctors in Court and How

They Should Testify" and William O. Bailey, Leesburg, "Practice of Medicine in Modern Russia."—Dr. Edwin W. Burton, University, was elected president of the Virginia Academy of Otolaryngology and Ophthalmology, May 2, at the annual meeting in Richmond. Guest speakers were Drs. Alfred Cowan and Chevalier L. Jackson, Philadelphia.—Meningitis was the subject for discussion at the annual meeting of the Clinch Valley Medical Society in Norton, April 25, at which Dr. Sara E. Branham of the National Institute of Health, Washington, D. C., was the guest speaker.

### WASHINGTON

**Graduate Lectures.**—The twentieth annual course of medical lectures and clinics will be presented by the University of Washington, July 20-24, in Seattle. Lecturers will be:

Dr. Harvey B. Stone, associate professor of surgery, Johns Hopkins University School of Medicine, Baltimore.

Dr. James H. Means, Jackson professor of clinical medicine, Harvard Medical School, Boston.

Dr. Wilburn Smith, professor of gynecology, College of Medical Evangelists, Los Angeles.

Dr. Lewis John Pollock, professor of nervous and mental diseases, Northwestern University Medical School, Chicago.

The fee for the course, including the annual banquet, will be \$10. Each evening there will be a "no-host" dinner, followed by a lecture. A trip to Mount Rainier will conclude the session. Further information may be obtained from the University Extension Division, University of Washington, Seattle.

### WEST VIRGINIA

**Society News.**—Dr. Hugh G. Beatty, Columbus, Ohio, addressed the Cabell County Medical Society, Huntington, May 14, on "Harelip and Cleft Palate."—At a meeting of the Kanawha County Medical Society in Charleston, May 12, speakers were Drs. Archibald P. Hudgins and Howard W. Angell, on "The Sterile Couple" and "Orbital Abscess" respectively.—Dr. Austin I. Dodson, Richmond, addressed the Harrison County Medical Society, Clarksburg, May 7, on "Relations of Focal Infections to Diseases of the Urinary Tract."—Drs. Wade H. St. Clair and Dean L. Hosmer, Bluefield, addressed the McDowell County Medical Society, Welch, May 13, on "Intraperitoneal Emergencies" and "Tumors of Bone" respectively.—Speakers at a meeting of the Raleigh County Medical Society in Beckley, May 21, were Dr. Isidore I. Hirschman, Huntington, on "Peripheral Arterial Disease" and Mr. Clarence Meadows, Beckley attorney, on "The Doctor on the Witness Stand."—Dr. Max M. Peet, Ann Arbor, Mich., addressed the Ohio County Medical Society, Wheeling, May 1, on surgery of the sympathetic system.

### WISCONSIN

**Illegal Practitioner to Leave State.**—L. A. Carpenter, who has been practicing medicine in Prairie du Sac, pleaded guilty recently to advertising himself falsely as a physician and to treating the sick without a basic science certificate. He was released on his promise to leave Wisconsin and to remove his advertising from newspapers, farm magazines and telephone directories at once.

**Graduate Courses.**—Two courses of graduate lectures in obstetrics and pediatrics were begun May 18 under the auspices of the state board of health at the suggestion of the State Medical Society of Wisconsin. Social security funds are defraying the expenses. Instructors are members of the faculties of the University of Wisconsin School of Medicine, Madison, and Marquette University School of Medicine, Milwaukee. Towns in which the lectures will be given for six weeks are Manitowoc, Appleton, Waupaca, Oshkosh, Tomah, La Crosse, Whitehall, Marshfield and Stevens Point. It is expected that other courses will be planned as funds become available.

**Society News.**—A symposium on cancer was presented at a meeting of the Dane County Medical Society in April at Madison; speakers were Drs. James P. Dean, Samuel B. Pessin, Ernest A. Pohle, all of Madison, and Cleveland J. White, Chicago.—Dr. Elmer L. Sevringhaus, Madison, spoke on "Endocrine Aspects of Menstrual Disturbances" at a meeting of the Outagamie County Medical Society at Appleton, April 21.—Dr. Roy D. McClure, Detroit, addressed the Medical Society of Milwaukee County, May 8, on "Artificial Fever Therapy." The Milwaukee Professional Men's Orchestra under the direction of Dr. Robert O. Brunkhorst gave a concert at this meeting.—Dr. Gilbert J. Rich addressed the Milwaukee Neuropsychiatric Society, April 23, on "Recreational Treatment of Prepsychotics."

## GENERAL

**Sight Conservation Classes.**—The National Society for the Prevention of Blindness announces that special courses for teachers and supervisors of sight-saving classes will be offered at the summer sessions of the following schools: University of Cincinnati, University of California at Los Angeles, State Normal School at Oswego, N. Y., and Teachers College, Columbia University, New York. Details may be obtained from the university or college.

**Results of Obstetric Examinations.**—Fifty-nine applicants were approved for certification by the American Board of Obstetrics and Gynecology in the examinations held in Kansas City during the annual session of the American Medical Association. Twenty-two were conditioned or failed. The next written examination and review of case histories of group B applicants will be held in various cities of the United States and Canada November 7. Application blanks and booklets of information may be obtained from Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh. Applications should be filed with the secretary sixty days prior to the scheduled date of examination.

**Survey of Teaching of Preventive Medicine.**—Dr. John G. Fitzgerald, dean of the faculty of medicine and director of the school of hygiene and of Connaught Laboratories, University of Toronto, is to make a survey of methods of teaching preventive medicine sponsored by the Rockefeller Foundation. Dr. Fitzgerald, assisted by Dr. Charles Edward Smith of Stanford University School of Medicine, San Francisco, will visit medical schools in the United States, Canada, the British Isles and European countries in the course of the studies. Dr. Fitzgerald will resign as dean at Toronto June 30 and will spend a year on the survey beginning September 15. It is expected that he will return in September 1937 as director of the school of hygiene and of Connaught Laboratories.

**Medical Bills in Congress.**—*Changes in Status:* S. 4627 has passed the Senate, proposing to create a Division of Stream Pollution Control in the Bureau of the Public Health Service. The Revenue Act of 1936, H. R. 12395, has passed the Senate, with amendments. An amendment was adopted by the Senate proposing to amend the Harrison Narcotic Act to provide that a person not registered as an importer, manufacturer, producer or compounder, and lawfully entitled to obtain and use narcotic drugs in a laboratory for the purpose of research, instruction or analysis, shall pay a special tax of \$1 per annum, and shall keep such special records as the Commissioner of Narcotics, with the approval of the Secretary of the Treasury, may by regulation require.

**Seminar on Physical Therapy.**—The fourth annual seminar of the Western section of the American Congress of Physical Therapy will be held in Los Angeles, June 18. Dr. William Bierman, New York, as guest speaker, will discuss, among other subjects, "Clinical Use of Short Wave Currents." Speakers will include:

Dr. Julius R. Scholtz, Los Angeles, Use of Ultraviolet Radiation in Clinical Medicine, with Special Reference to Cutaneous Diseases.  
Dr. Henry Borsook, Pasadena, Vitamins in Medicine.  
Dr. William Rains, Los Angeles, attorney for Medical Protective Company, Legal Aspects of Physical Therapy.

Dr. Edward M. Pallette, Los Angeles, president of the California Medical Association, will be toastmaster at the annual banquet in the evening, and Dr. Bierman will discuss "Fever Therapy."

**Society News.**—Dr. Benjamin O. Whitten, Clinton, S. C., was chosen president of the American Association on Mental Deficiency at its annual meeting, May 4; Dr. Harry C. Storrs, Wassauc, N. Y., vice president, and Dr. E. Arthur Whitney, Elwyn, Pa., secretary. The next annual meeting will be held in Atlantic City in May 1937. —Dr. Haven Emerson was reelected chairman of the National Committee on Maternal Health, Inc., at its annual meeting in New York, April 24; Dr. Robert L. Dickinson was named chairman of the executive committee; Dr. Frederick C. Holden, medical director and treasurer, and Dr. Howard C. Taylor Jr., vice chairman and secretary. —Dr. William S. Tillet, Baltimore, was elected president of the American Society for Clinical Investigation at the annual meeting in Atlantic City, May 4. Dr. Luther Emmett Holt Jr., Baltimore, was made vice president and Dr. Joseph M. Hayman Jr., Cleveland, secretary. —Dr. Chester M. Jones, Boston, was elected president of the American Gastro-Enterological Association at the annual meeting in Atlantic City, May 4. Drs. Ralph C. Brown, Chicago, and Ernest H. Gaither, Baltimore, were made vice presidents. —The National Medical Association will hold its annual meeting in Philadelphia, August 16-22.

## LATIN AMERICA

**National Tuberculosis Council.**—Announcement is made of the creation of a National Tuberculosis Council to direct antituberculosis work and the care of tuberculosis patients in Cuba. Decree law number 706, under which the council is established, provides that it will have charge of hospitals, visiting nurses and other phases of tuberculosis prevention work. A certain percentage of the proceeds from the weekly drawings of the national lottery will be placed at the disposal of the council for this work. In addition, donations legally made to this fund will be used to defray expenses. Initial funds to be collected will be used to construct a sanatorium in the Trinidad mountain section of the province of Santa Clara.

## FOREIGN

**Personal.**—Sir Robert Muir will retire, September 30, from the chair of pathology at the University of Glasgow, according to *Science*. He has held this position since 1900. The retirement is also announced of Dr. Thomas K. Monro, who has held the chair of the practice of medicine since 1913.

**Congress on Malaria.**—The third International Congress on Malaria will be held in Madrid, October 12-16, under the presidency of Prof. Gustavo Pittaluga, Madrid. The secretary asks that copies of all reports and communications, with brief summaries for the press (not more than twenty lines), be sent before July 1. Applications for membership must be accompanied by two small photographs to be used in the members' personal cards, which will be essential for all matters concerning the congress as well as for reductions in transportation costs obtained by the committee on arrangements. Dr. Emilio Luengo, chief of the parasitology service at the National Institute of Health, Madrid, is secretary general of the organizing committee of the congress. Correspondence should be addressed to him at Instituto Nacional de Sanidad, Calle de Recoletos 19, Madrid.

**International Conference on Tuberculosis.**—The tenth conference of the International Union Against Tuberculosis will be held in Lisbon, Portugal, September 7-10, under the chairmanship of Dr. Lopo de Carvalho, president of the union. The biologic subject to be discussed is "Radiological Aspects of the Pulmonary Hilum and Their Interpretation," in discussion of which the United States will be represented by Dr. Henry C. Sweany, Chicago; the clinical subject, "Primary Tuberculous Infection in the Adolescent and the Adult," with Dr. Robert E. Plunkett, New York State Department of Health, Albany; and the social subject, "The Open Case of Tuberculosis in Relation to Family and Associates," with Dr. Charles J. Hatfield, Philadelphia, as a discussor. Application for membership and other information concerning trips to the conference may be obtained from the National Tuberculosis Association, 50 West Fiftieth Street, New York City.

## Government Services

## Forty States Free from Bovine Tuberculosis

Nebraska is the fortieth state to be certified as a modified accredited area in the campaign to eradicate bovine tuberculosis, the U. S. Department of Agriculture announces. Most of the tuberculin testing has been done within the past two years. It will now be necessary only to retest the various counties at regular intervals as a precaution to keep the disease from gaining another foothold.

## Hospitals for Indians

Appropriations from the Public Works Administration have been set aside for hospital construction on the Blackfeet and Crow reservations in Montana, the Sisseton, Yankton and Crow Creek reservations in South Dakota, the Cherokee reservation in North Carolina, and at Cass Lake, Minn., for the Chippewa Indians, the Department of the Interior announces. The Indian Service now has under construction hospitals for the Zuni Indians in New Mexico, the Warm Springs group in Oregon, the Western Shoshone tribe in Nevada, and another at Yuma, Ariz. An Indian unit at Ah-Gwah-Ching, Minn., and a thirty-eight bed hospital on the Colville reservation, Washington, have recently been completed. The total amount made available for all these projects is \$1,870,026. It is planned that about 1,000 beds will have been added to the facilities for Indians when the present and contemplated construction is finished.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 25, 1936.

#### The Need for Physical Education

About eighteen months ago the minister of health suggested to the council of the British Medical Association that something might be done to bring home to the public the benefits of physical culture. The result was that the council appointed a physical education committee consisting largely of physicians and others interested in physical culture. The committee has presented an elaborate report in which it makes the startling statement: "Not less than 40 per cent of the population between the ages of 14 and 40 need, but do not participate adequately, if at all, in physical recreation or training. The results are only too evident in the defective physique of large sections of the population." To raise the national standard, it is recommended that the following measures be taken at once: (1) extended provision by local authorities of facilities of all kinds for physical recreation, especially for outdoor games and swimming; (2) greater financial assistance to the physical activities of voluntary organizations; (3) closer cooperation between all agencies, whether official or voluntary, concerned with physical recreation; (4) propaganda, including the use of the cinema; (5) increased supply of qualified teachers; (6) more intimate relation between physical education and the science and part of medicine. It is pointed out that three government departments—the Ministry of Health, the Ministry of Labor and the Board of Education—are concerned with physical education. Immediate steps should be taken on a national scale for coordinated action, which might be administered by the recently formed Central Council of Recreative Physical Training. As to the relation between physical education and medicine, the report states: "Physical education has progressed from being a narrow specialty of the gynosium and games field, in the hands of instructors with limited training and apprehension, toward a national service, which aims at securing greater health, fitness and happiness for the people as a whole, irrespective of age or sex. It should take its place among the great social services as a branch of public health." Organizers of physical education should be appointed by all local authorities.

#### PHYSICAL EDUCATION IN SCHOOLS

Physical education in schools should include systematic gymnastic exercises, games and other activities, each playing its part in a balanced scheme of training. Gymnastic training should not be regarded as subsidiary to field games and athletic sports. Swimming should be taught as a regular part of physical education in all schools. Instruction in elementary physiology and personal hygiene as a branch of general science should be regarded as an essential part of physical education. These subjects should be taught in a practical way and should be related both to the gymnastic training and to the periodic medical examination. Local education authorities should provide suitable clothing and gymnastic shoes for children whose parents cannot do so.

#### THE MEDICAL SUPERVISION OF PHYSICAL EDUCATION

Physicians have hitherto been concerned chiefly with the physical treatment of the abnormal rather than the normal, and with the individual rather than the community. They have devoted attention to the cure and prevention of disease rather than the perfecting of the race. Nevertheless physicians engaged in attending communities such as industrial organizations, schools and the defense services have long been pressing the need for

extending physical education to the whole population. The physician, too long absorbed in the treatment of individuals, is more and more coming to realize that he has an important part to play in furthering communal well being. The committee considers that not only should there be regular medical examinations in schools but in all matters concerning physical development and health of the individual pupil there should be close cooperation between the head master, the school doctor, the parents and the teacher of gymnastics. This is especially desirable in the prevention of strain, which girls are liable to suffer in mixed schools. Medical supervision should be available to ensure that unfit children do not participate in unsuitable or excessive exercises. Physicians should cooperate with teachers of gymnastics in investigating the physiologic requirements and effects of the various exercises with a view to the scientific arrangement of the syllabus of training. Postgraduate courses should be established to provide physicians with the special training which the medical supervision of physical education requires.

#### PHYSICAL EDUCATION FOR THOSE NO LONGER ATTENDING SCHOOL

To be of permanent value, physical education should be continued under expert guidance after the individual has left school. A considerable number of young people receive physical education at evening classes organized or financially assisted by the local authorities. But there is a deficiency of suitably trained leaders, and facilities for joining the classes are insufficient.

#### ALCOHOL AND TOBACCO CONDEMNED

The committee declares that alcoholic beverages are not necessary in physical training and may be harmful. Smoking, especially when practiced to excess and when the smoke is inhaled, is definitely injurious. Prolonged investigation has proved that excessive smoking (twenty cigarettes a day) is detrimental to endurance by making the heart irritable, with consequent earlier onset of fatigue.

#### Features of Malignancy

At the Royal College of Surgeons, Sir Robert Muir, F.R.S., professor of pathology at the University of Glasgow, delivered the Lister Memorial Lecture on "Malignancy, with Illustrations from the Pathology of the Mamma." He gave a survey of our knowledge of malignancy. He said that experimental work on transplantation of tumors showed that the margin between growth and nongrowth was comparatively narrow, and that there were numerous human cases of malignant cells being overcome and disappearing. Once acquired, malignancy seemed to be a permanent property of the cells; they might be destroyed or die out but not regain normal behavior. Research had advanced our knowledge of the etiology, but the nearest approach to a general statement which could be made was that the acquisition of malignancy was related to previous non-neoplastic proliferation. Three conditions might lead to this: 1. Chronic irritation in its widest sense. Nothing might be known of the nature of the irritant, as is carcinoma of the cervix. 2. Compensatory hyperplasia, such as occurred in the liver after loss of its substance. 3. Hormones.

The two main theories as to the cause of malignancy were that it was the result of a change in the mechanism of the cell and that it was produced by a virus. The change in the cell appeared to be twofold: an escape from the normal growth-controlling agencies of the body and the appearance of special structural characters. The parasitic theory of cancer had passed through many phases. It was generally recognized that if a parasite was concerned it must be an invisible microbe, such as a virus. But there was no evidence that malignancy was produced by a virus or viruses entering the body from outside, and experimental facts appeared to exclude this. Growths could be set up by carcinogenic agents so regularly,

not only when applied externally but also when introduced into the tissues, that access of a virus from outside on each occasion seemed impossible. The conclusion appeared inevitable that the virus must be present within normal tissues and act only when proliferation had been set by carcinogenic agents or in some other way.

#### MALIGNANCY IN THE BREAST

Recent research showed that a variety of structural changes in the mammary epithelium led up to malignancy. They consisted of (1) increased and altered secretion, accompanied by changes in type of epithelium and desquamation, and (2) hyperplastic proliferation of the epithelium. The hyperplasia was attended by coordinated increase of connective tissue. Thus there arose papillomatous growth in the ducts, often associated with cystic dilatation. The next stage was relative overgrowth of epithelium in comparison with stroma. This gradually passed on to proliferation of epithelium alone. Finally, the anaplasia became distinct; the cells and their nuclei varied in size, the latter becoming vesicular with distinct nucleoli. Ultimately masses, with all the characters of encephaloid carcinoma, appeared within the ducts. He believed that local intraduct carcinoma was quite common. The cells had acquired the characters of malignancy yet were still within normal bounds—a sort of tissue culture of malignant cells still within the test tube. Ultimately there was a break through the normal bounds, with ordinary infiltrating cancer as the result.

#### Avian Tuberculosis in Cattle

In a letter to the *Times*, F. C. Minnett, director of the Research Institute in Animal Pathology, Royal Veterinary College, contradicts the statement made by another correspondent that only recently has undeniable proof been obtained of the danger of cattle contracting tuberculosis from poultry. In the *Journal of Comparative Pathology and Therapeutics* in December 1932 he reported five cases of tuberculosis in cattle which were proved to be due to bacilli of the avian type. These cases occurred in three calves and two adult bovines belonging to three herds. In at least one of these herds there was evidence that other calves also were affected, while in two of the herds tuberculosis was proved by tuberculin testing or by postmortem examination to exist among the fowls, which had free access to the cattle. Minnett points out that tuberculosis of the avian type is not altogether rare in mammals. It has been encountered fairly extensively in pigs, and cases have been seen in wild animals kept in captivity and occasionally even in horses, deer and sheep. In mammals the disease is usually retrogressive and therefore not serious as far as the animal itself is concerned, but cattle so affected may react for a time to tuberculin. Although it is probable that infection is generally acquired in calfhood and is overcome by the time of adult life, two of the cases recorded by Minnett were in adults, one animal being 18 months old at the time of slaughter, while the other was an old cow. The knowledge now available shows the need for preventing poultry having access to cattle unless it is certain that tuberculosis is absent.

#### Trachoma in Palestine

The report for 1935 of the Ophthalmic Hospital of the Grand Priory in the British Realm of the Venerable Order of the Hospital of St. John of Jerusalem, whose chancery is in London, has just been published. The number of new patients seen during 1935 was 21,116. The incidence of trachoma among them reached the extraordinary height of 92 per cent, the highest recorded in the hospital. The warden of the order states that in the most backward villages of Palestine almost all the inhabitants beyond the age of infancy have trachoma. In the larger towns the incidence is much less, though there has been an increase in the wake of a cycle of severe epidemics of conjunctivitis.

#### PARIS

(From Our Regular Correspondent)

April 25, 1936.

#### Sodium Chloride Solutions for Postoperative Toxemia

The method of treatment termed rechloridation to combat postoperative complications has been the subject of a number of papers. Max Levy of Paris read one at the January 7 meeting of the Académie de médecine, citing some remarkable results from giving intravenously a 4 per cent solution of sodium chloride. There are many deaths following operation which are difficult to explain if the more common complications are excluded. Recent studies have revealed the existence of a postoperative toxemia which may not only be checked in its incipient stages but the development of which may be prevented by the administration of sodium chloride solution in high concentration. In its mildest form, such a toxemia presents itself in the first few days following operation as a feeling of exhaustion, slight evidences of intestinal paresis, decreased urinary output and lowered blood pressure. If the symptoms increase, the malaise and weakness become more marked, the tongue is dry, the blood pressure drops more, the pulse increases in rapidity, hiccup appears and the oliguria may progress to almost complete anuria.

The evolution of this more severe clinical picture varies greatly. The symptoms may recede spontaneously and slowly or a more serious termination may ensue either with a single symptom or with a combination of symptoms. Under the former heading one may encounter cases of (a) coma with anuria and Cheyne-Stokes respiration, (b) uncontrollable vomiting resembling an acute ileum, (c) marked irregular elevations of temperature or (d) a case in which the signs of cardiovascular disturbances predominate. A fatal outcome may ensue gradually or occur with lightning-like rapidity. As the result of the work of Chabanier and Lobo-O'Neill, Levy, Legueu and Fey and of Duval, the mechanism of such a postoperative toxemia has been greatly cleared up. The following working hypotheses, the majority of which have been proved by laboratory studies, have been set up:

1. Disturbance of nitrogenous metabolism.
2. Disturbance of chloride metabolism.
3. Lack of acid-base equilibrium.

The hypochloremia does not express itself by any important sign clinically. Following operation a patient may present a marked hypochloremia and yet seem to be making an uneventful recovery. On the other hand there may be only a slight hypochloremia and grave symptoms of toxemia may be present. This lack of concordance between certain laboratory evidence and clinical signs is true also of the variations of the blood urea. The increase in residual nitrogen seems to dominate the time of appearance and degree of severity of the symptoms of toxemia (postoperative).

In a postoperative case in which either the milder or more severe symptoms appear as previously mentioned, a chemical analysis of the blood and urine should be made immediately. The blood examination must include percentage of urea, plasma and globular chloride content and glycemia. The urine examination embraces percentage of urea, chlorides and acetone. All the results can be obtained within two hours. The marked decrease or complete disappearance of chlorides in the urine gives one the best idea of the degree to which chlorides have been withdrawn from the blood and tissues to be lodged in the operative zone. One should begin the treatment by the administration very slowly of 20 cc. of a 4 per cent solution of sodium chloride. The total amount of sodium chloride to be injected during the first and following days depends first on the degree of dechloridation. The more marked the diminution of chlorides in the urine, the more sodium chloride should



be given. Secondly, the patient whose symptoms of toxemia are very serious requires a larger amount of sodium chloride, i. e., more rechloridation, than a patient with only mild toxemia. Thirdly, the longer the symptoms have lasted, the more sodium chloride is needed. Twenty cc. is inadequate if all three of these are very marked. Under these circumstances the first dose should be from 30 to 40 cc. of the 4 per cent solution followed in from eight to twelve hours by a second one of 20 cc.

The blood and urine should be examined daily and the treatment continued until the blood chlorides and urea have returned to the normal figure, the quantity of urine is greatly increased, and all clinical symptoms have receded. In general, it suffices to give between 20 and 30 Gm. of sodium chloride the first day, between 10 and 20 the second day and between 5 and 10 the third.

The results of this rechloridation treatment have been most gratifying, especially following abdominal operations in general surgery and after prostatectomy.

#### Immediate versus Late Operation in Acute Osteomyelitis

A discussion took place at the March 4 meeting of the Académie de chirurgie as to whether the classic method of immediate operation in cases of acute osteomyelitis should be replaced by expectant treatment until a subperiosteal abscess has appeared. Leveuf advocated the latter method, basing his opinion on experience in sixteen cases. The shortest interval in which operation was performed was three days, the longest forty days. In fifteen of the sixteen patients only an abscess was drained. In one of the sixteen an operation (resection) was necessary in a case of acute osteomyelitis of the lower end of the radius with separation of the epiphysis. The presence of *Staphylococcus aureus* was demonstrated in all sixteen cases (children and adolescents). The best two methods of following the spontaneous evolution of an acute osteomyelitis are to observe the recession of the fever and the results of the blood cultures. The former reaches the normal level at about the fifteenth day in the average case after admission to the hospital. With the drop in temperature, an improvement in the general condition can be noted. This is especially striking in cases in which the onset has been accompanied by symptoms of severe toxemia.

The results of hemoculture are also a good criterion of the progress of the case. In cases of acute osteomyelitis which terminate in death and in which early operation has been of no avail the blood cultures remain positive throughout the period of clinical observation. In the sixteen cases in which operation was delayed, the hemoculture was negative in six. It was positive in the ten other cases on one or several occasions. The hemoculture remains positive from five to twenty-five days after admission to the hospital. At times the hemocultures that were positive become negative even when no operation has been performed. In others the hemocultures remain positive until after the abscess has been incised. In one case the hemocultures remained positive even after such an incision. In general, one can say that there is a certain relation between the severity of the osteomyelitis and the persistence of positive hemocultures. Radiography reveals bone changes at the end of fifteen days in the form of sequestrums, which serve as indications for operation; but these sequelae are minimal if one waits. Expectant treatment does not have a harmful influence on the bone lesions. This is especially true of osteomyelitis of the neck of the femur, as Ombredanne and Petit have already shown. Leveuf believes that early operations open bone and muscle areas where the defense against the toxins of *Staphylococcus aureus* has not yet been organized. The only danger of delayed operation is involvement of a joint adjacent to the osteomyelitic focus. Leveuf saw this in only one case. In such cases, early resection is indicated.

The discussion was opened by Bazy, who stated that the same principle of waiting until local defense has been established is true of peritonitis, empyema and infections involving soft tissues as well as in acute osteomyelitis. Sorrel believed that the teachings of Leveuf if carried out indiscriminately would lead to dangerous results. Mathieu also endorsed early operation, with the proviso that one should remove as little bony tissue as possible. The possible extension to an adjacent joint was also a reason why operation should not be delayed too long.

Grégoire said that he had opposed immediate operation ten years ago. He had been influenced in arriving at this opinion by the excellent results obtained by giving antistaphylococcus vaccines in cases of acute osteomyelitis. The only criticism to be made against the vaccine treatment is that it is too simple and hence a dangerous weapon in the hands of those who do not fully understand the pathology of acute osteomyelitis. A vaccine should not be used indiscriminately but only when there is a recrudescence of the fever.

#### BERLIN

(From Our Regular Correspondent)

April 22, 1936.

#### Nature Medicine and "New German Medicine"

News of these movements have been reported from time to time in THE JOURNAL. It can almost be said that no fundamental difference exists between the two groups. The attempt has been made by the use of more forceful propaganda to penetrate the circle of those physicians who have been trained to think rationally and to practice accordingly. Numerous books on the subject are being printed. A few characteristic features of this literature will be mentioned. First of all, mention must be made of the "Biologic-Medical Pocket Manual" published by the director of the museum of hygiene at Dresden, Professor Martin, in collaboration with twenty-nine "physicians and scientists." This work is dedicated to that "New German Medicine" with which the national führer of medicine, Dr. Wagner, is closely identified and which he has done so much to further. "The New Medicine," says Dr. Wagner in a sort of introductory harangue with which the book begins, "cannot be founded on science in the strict sense of the term but rather on the National Socialist weltanschauung as it affects the fundamental nature and biologic laws of all happenings." The collaborating "scientists" have gone about their task with this idea in mind. The section of the book on nutrition rests principally on the teachings of the Zurich physician Dr. Bircher-Benner, who has made a German reputation through his courses and lectures within the reich. The physical methods are quite expertly worked out but they are carried far beyond their legitimate boundaries. Among other methods endorsed is that of treatment with multiple irritant punctures, although the use of this procedure in earlier times forms one of the darkest chapters in medical history. Artificially induced suppurations also are recommended. Treatment with medicaments shows the usual backward trend exemplified by the grossly exaggerated recommendations of vegetable preparations the efficacy of which remains to be demonstrated in actual practice. The book contains a pernicious advertisement section, a good example of how the unbelievable may actually come to pass. Here a language utterly different from that of standard medical literature is frequently encountered. Arsphenamine is not entirely dispensed with, although its use is expressly termed "provisional." This booklet of nearly 600 pages sells for the modest price of 3.50 reichsmarks and may be easily obtained by the medical profession as well as by the public (the distinction between physician and layman is no longer regarded as fundamental). The work would no doubt make amusing reading for the Council on Pharmacy and Chemistry.

Under present conditions, with these new doctrines receiving governmental sanction, it seems remarkable that a dissenting voice should be heard. Prof. F. O. Hess, hospital director in a city of medium size, has spoken his mind on the subject before the regional medical union. In the near future Nature Medicine and Biologic Medicine are to have a hearing in open convention, and one can scarcely wait until this comprehensive airing of the opposing points of view takes place. There exists today a danger of authentic factual data being shaken and upset by unproved assertions. As examples, Hess cites the widespread disuse of serotherapy, of vaccination against smallpox and the doubtful attitude toward all diagnostic methods. Physicians must reject those accounts of manifestly superior results which appear in popular publications together with a dig at scientific medicine. Such popular articles pass over in silence the accomplishments of regular medicine in the field of infectious diseases. Interesting sidelights are furnished by the discussion which followed this address. The Rudolph Hess Hospital of Dresden, which has dedicated itself to these Nature Cure methods, is now treating venereal diseases, notably gonorrhea and syphilis, exclusively with Nature Cure procedures. As the local dermatologic society has expressly stated, such treatment obviously is harmful to the patient and in addition fails to protect others, including future generations, from the infection.

The treatment of appendicitis, as described in a widely circulated "Handbook of Nature Medicine" by Brauchle, calls to mind the therapeutic methods of the year 1750, when medical science knew no better. A movement which advocates the use of poultices, fasting, purges and clysters in the treatment of appendicitis cannot be regarded as other than a decided backward trend of medical progress. The direction here taken by Nature Medicine imperils all the advances of proved worth in the treatment of the disease. From this noteworthy controversy physicians in other countries are able to form a good picture of the German situation.

In the same issue of the *Münchener medizinische Wochenschrift* that carries an account of these events, it is announced that the second International Congress on the Diagnosis of Iridal Disorders will be held at Nuremberg in May. Topics will be "Diagnosis of Iridal Conditions in Relation to General Diagnostic Methods" and "Diagnosis of Iridal Conditions in Digestive Disorders, with Especial Consideration of Differential Diagnosis." At the same time the national convention and centenary celebration will be held at Nuremberg, the center of the Nature Cure movement.

The sort of material it is possible to find in contemporary professional publications is exemplified by the following advertisement, which appeared in a widely circulating medical weekly toward the close of 1935: "Therapeutic Magnetizer with Complete Especially Strong Magnetizing Powers—Can Light Incandescent Bulbs of 220 Volts by Contact—Situation Wanted. Address . . ."

It will be interesting to see what the previously mentioned joint convention of "New German Medicine" and the "German Society of Internal Medicine" holds in store.

### German Women in the Professions

The number of active German academicians (university graduates with professional careers) is estimated at around 350,000. What proportion of this number are women can be determined from statistical reports of several professional groups. The National Medical Almanac, for example, and the statistics compiled by the League of German Women Physicians place the total number of women physicians in the German reich and Danzig as of 1935 at 3,675. This figure represents an increase of 8 per cent over 1932. Of these women 278 (7.6 per cent) are no longer professionally active. Those employed, that is, occupying regular posts, number 888 (24.2 per cent), an

increase over 1932. On the other hand, the percentage of women physicians in independent practice has decreased from 74 (in 1932) to 62.2. Of these 2,509 independent women practitioners the vast majority are in general practice; only 28.5 per cent are specialists. How strongly women feel drawn toward pediatrics is shown by the fact that 43 per cent (309) of the specializing women physicians are pediatricians. After pediatrics, other specialties engaged in by women follow at a considerable distance; thus, ninety-seven women gynecologists form 13.6 per cent of the total, seventy-four women ophthalmologists 10.4 per cent and sixty-six women internists 9.2 per cent. Geographic distribution of female physicians is remarkably uneven throughout the reich. Berlin contains 20 per cent of the professionally active women physicians, 518 in private practice, 153 occupying positions. In Berlin also is the largest proportion of women specialists, of whom forty-eight, nearly 36 per cent, are pediatricians; and yet whole provinces are without more than one or two women gynecologists each.

Of a total of about 52,000 German physicians, 7 per cent are women. The percentage of women admitted to the sick insurance practice is still smaller; of 31,146 insurance physicians, 1,224 (3.97 per cent) are women. Since the officially authorized national insurance societies numbered 6,250,000 females among their membership in 1933, it will be seen that the number of female physicians capable of treating female insurance patients is also quite small. Within the last few years 300 non-Aryan women physicians were excluded from the insurance practice on racial grounds, while in 115 other instances of license revocation the physicians were chiefly married women and the purpose was to eliminate the so-called state of double earning. In 1934, 348 women began the study of medicine, as against 889 in 1933 and 1,151 in 1932.

According to official statistics for 1933, of a total 12,120 dentists, 1,250 were women. Of these women dentists, 692 were independent and 558 employed. The proportion of males to females was the same as among the medical profession; the women formed 7 per cent of all practicing dentists. The decline in the number of female dental students has been even greater than the decline in the number of female medical students; in 1934 only sixty-two women began the study of dentistry, against 357 in 1932.

In 1933 the profession of veterinarian was followed by fifty-three women. Only a few of this group, namely, fifteen, were independent, the other thirty-eight being employed. While twenty women are students of veterinary medicine in the universities, only one woman began a course of study in this field in 1934.

According to official records there were 3,716 women pharmacists in 1933, including those undergoing training. A new report for 1934 lists 104 pharmacy proprietresses, 425 employed women pharmacists and 1,064 women pharmacy assistants—altogether 1,593 women in a total of 14,128 pharmacists of both sexes. There were besides in the same year 727 women pharmacy apprentices. Restriction of the number of pharmacies in which apprenticeships may be filled has caused a decline in the number of apprentices. More than 50 per cent of male pharmacists are independent proprietors, but not 7 per cent of the women reach this goal.

One of the most important academic professions with regard to women is that of "teacher in the higher schools." Among a total 37,505 teachers of this rank, including school heads, 5,428 women were listed.

While the number of female political economists is unknown, there were in 1933 thirty-six women judges and 251 women lawyers. In 1934, 104 women passed the second examination in jurisprudence. How small the future generation of women attorneys will be is illustrated by the fact that in 1934 only

seventeen women began the study of law. Figures for 1933 show 168 women among the evangelistic ministers and missionaries.

Compared with the total number of women in gainful occupations (around 11,500,000), women in the foregoing professions constitute a relatively small group. There were twenty-six women listed as lecturers on the university faculties for the winter semester 1935-1936. None of these women held full professorships, thirteen were unofficial extraordinary professors, and the remaining thirteen were instructors (*privatdozentinnen*, according to the previous designation). The twenty-six women members of the university faculties were distributed as follows: Berlin 6; Hamburg 5; Munich 4; Breslau, Giessen and Heidelberg, two each; one each at Göttingen, Düsseldorf (the Academy of Medicine), Jena, Marburg and Würzburg. The remaining German universities have no women faculty members: The following fields of specialization are represented by the twenty-six women lecturers: eight women profess as many medical specialties; namely (1) anatomy, (2) genetics, (3) ophthalmology, (4) hygiene and bacteriology, (5) dermatology and venereology, (6) pharmacology, (7) pathologic physiology and (8) dentistry. Fields other than medicine and the number of women professing therein are international law and jurisprudence one, political economy three, philology three, psychology and pedagogy three, natural sciences a total of eight of which four are in botany (which includes plant genetics), and one each in oceanography, zoology, chemistry and physics.

### BELGIUM

(From Our Regular Correspondent)

April 24, 1936.

#### International Congress for Juvenile Protection

The International Congress for Juvenile Protection, which recently met at Brussels, held that attendance at establishments for children of preschool age should not be compulsory; furthermore, that governments should see that all such institutions possess (1) a teaching staff especially trained to deal with children of this age, (2) medical supervision that guarantees adequate puericulture (physical and moral upbringing of the children) and (3) a competent assisting personnel, the members of which while not exceeding their authority know how to facilitate the harmonious cooperation of the teachers, the physicians and the children's relatives. Additional recommendations of the conference were that the parents should be kept constantly informed as to the child's progress; that relatives, and mothers in particular, should be given as much beneficial instruction as possible, and that a record of the child's health should be maintained by cooperation on the part of the family and of the infant welfare organizations, the latter being subsequently replaced by other organizations with which the child of school age shall come in contact.

#### The Belgian Puericulture Centers

Under the auspices of the Belgian Puericulture Centers a model pediatric clinic has been built. The center for supervised familial placement will be temporarily housed at the clinic until the construction of its own new building on the outskirts of Brussels has been completed.

The puericulture clinic was formally opened in December 1933 by the queen, then duchess of Brabant. In it are hospitalized healthy children less than 6 years of age and children suffering from debility or noncontagious diseases who are unable to receive maternal care. When the mother is widowed or deserted the clinic takes in both mother and child. The children are isolated in tiny individual cubicles, which open on wide, covered balconies and which are separated one from the other by glass partitions. Each of the cubicles is equipped

with a special ventilating apparatus, a smooth radiator, easily washed, and a bath tub with hot and cold running water. Each child's necessities are kept in little individual glass wardrobes. Each upper story of the hospital building recedes from that directly below it and the width of these setbacks corresponds to that of the balconies. By this arrangement every floor of the building receives an equal amount of daylight.

The prescribed regimen for each little patient is prepared by the dietitians in a special diet kitchen. Direct communication is maintained between the diet kitchen and the pantries of each upper floor by means of an electrical dumbwaiter. By means of a pneumatic tube system, written dietary instructions can be transmitted without going astray. Sleeping apartments are especially designed for the care of prematurely born infants. This manner of housing the prematurely born has replaced the incubator, which obsolescent device is no longer used in modern pediatric institutions. The premature babies are cared for by a specially trained personnel which has charge of the constant feedings of breast milk. An operating room is equipped for minor surgical procedures. Children suspected of harboring contagious diseases are kept in the strictest isolation. Spacious reception rooms and consultation rooms are situated on the ground floor.

In addition to indigent children and children confided to its care by welfare organizations, the foundation accepts as patients the children of well-to-do parents. The income realized from the boarding of children of the latter class, small though it may be, enables the clinic to take better care of the less fortunate little ones. The institution is conducted on a strictly nonprofit basis.

Recently a school has been established in connection with the clinic which offers instructions in the theory and practical application of puericulture. Every student who passes the final examination receives a diploma in puericulture. The curriculum is designed for young girls possessing a general education and background at least of secondary school level, as well as for midwives and social workers who wish to complete their training in puericulture. The regular course covers a period of four semesters, but this is reduced to two semesters for social workers and to one semester for graduates in nursing and obstetrics. Students are required to reside at the clinic.

### SWITZERLAND

(From Our Regular Correspondent)

April 20, 1936.

#### The Organization of the Swiss Medical Profession

In Switzerland the foundation of the organized medical profession is the *Verbindung der Schweizer Aerzte* (League of Swiss Physicians), which, according to its constitution, draws its membership from the cantonal organizations affiliated with three linguistically differing groups: the *Verband deutschschweizerischer Aerztegesellschaften* (Federation of Medical Societies of Germanic Switzerland), the *Société médicale de la Suisse Romande* (Medical Society of French Switzerland) and the *Ordine dei medici del cantone Ticino* (League of Physicians of Ticino Canton [Italian Switzerland]). The *Verbindung der Schweizer Aerzte* is the ranking official organization of the Swiss medical profession. Among its aims may be mentioned investigation of scientific questions and promotion of advanced medical study, protection of professional interests by its power to make and to enforce suitable regulations in particular circumstances, and representation of the will of the Swiss medical profession in questions of public health and the control of disease. The *Verbindung's* legislative authority is vested in the *Schweizerische Aerztekammer* (chamber of Swiss physicians), which is composed of delegates from the several cantons. Each cantonal organization is entitled to elect one delegate and one alternate for each fifty members or fraction thereof. The term

of office is three years. The *aerztekammer* holds a regular annual session and may be called into special session if circumstances warrant.

The executive power of the *verbindung* rests with a central executive committee, the personnel of which is selected by the *aerztekammer* from among the physicians of the *verbindung*.

Decisions of the *aerztekammer* become binding on the entire membership of the *verbindung* if within two months of their announcement no objection has been raised by at least three cantonal organizations. The *Verbindung der Schweizer Aerzte* is concerned only with those political questions which in some way involve the profession. Now and then such questions may have economic implications. The actual protection of the medical profession's economic interests in the narrowest and most literal sense of the term is the function of the *Aerztesyndikat für die Wahrung wirtschaftlicher Interessen* (Syndicate for Protection of the Economic Interests of Physicians). Membership in the *verbindung* carries with it automatically membership in the syndicate. The *verbindung* is a nonprofit association in the eyes of the civil code, while the syndicate, because of its economic activities and the extent of its financial interests, is organized along the lines of a business corporation. The syndicate protects the interests of the physicians in dealings with medical supply houses and their organizations, procures privileged contracts with the insurance societies, functions as a collection agency, provides legal counsel and handles all economic questions which may be referred to it by the central executive committee of the *verbindung*.

Finally, there is the Swiss Physicians' Old Age and Life Insurance Society, founded Jan. 31, 1926. Any doctor who belongs to the *verbindung* and the syndicate may become a member and, by virtue of mutual agreements, members of the Society of Swiss Veterinarians and members of the Swiss Dental Association are considered eligible. In evaluating the importance of old age insurance and life insurance for the Swiss doctor, the syndicate has been influenced by the consideration that not so long ago the physician was scarcely in a position to save money without a certain compulsion being exercised. A holding in the insurance society, however, meant a compulsory putting by of at least 100 francs a year. This old age and life insurance society forms an integral part of professional organization.

The *Verbindung der Schweizer Aerzte* maintains as an adjunct its own legal tribunal a medical council of honor for the adjudication of internal disputes.

The *Schweizerische Aerztezeitung*, founded in 1920, serves as official organ of the entire medical profession. It endeavors to keep the physician informed on current medical topics and also contains news of the national and cantonal organizations. The price of subscription is included in and amounts to some 12 per cent of the annual (*verbindung*) dues.

Various procedures govern the payment of dues. The syndicate exacts nothing in the way of contributions from its membership. Since it is incorporated for profit and has to date limited itself to strictly business transactions, it can afford to waive any special levy on its members. The *verbindung* requires annual dues of 30 francs from its regular members. For physicians in official positions this amount is reduced to 15 francs, and the cantonal societies may obtain reductions for other doctors in special circumstances (beginning practice, withdrawing from practice and so on). Doctors purchasing old age and life insurance are permitted to choose among many differently regulated types of insurance; annual payments may be anywhere from 100 to 2,000 francs.

The *Verbindung der Schweizer Aerzte* numbered 3,368 regular members in 1935; including extraordinary (or special) members the figure is 3,987.

Of the authoritative rulings of the *aerztekammer*, some are worthy of mention: With regard to the factory physician, for example, although his importance as custodian of the worker's health is acknowledged, the chamber forbids him to hold office hours for therapeutic counsel. Such a procedure, it is held, is counter to the present-day concept of the patient's free choice of a physician. For a doctor to hold regular consultation hours away from his own residence and in a locality where one or more other doctors are already practicing is deemed a breach of professional ethics, especially if unjustified by a prolonged residence in the locality or by some manifest public need.

The next topic discussed is "The Regulation of the Specialization Question." In the last few years, an increasing number of rulings have been made with regard to specialization. The present arrangement is somewhat as follows: A specializing physician may work in his particular department either exclusively or incidentally; he may use at the same time the title of a specialist and that of a general practitioner. Use of this double nomenclature, however, may be forbidden by the cantonal medical societies.

As specialties only the following fields are officially recognized: surgery, dermatology, obstetrics, gynecology, internal medicine (with its particular subdivisions such as heart, lungs, stomach, intestine, metabolism), neurology, ophthalmology, orthopedics, otorhinolaryngology, pediatrics, psychiatry, radiology, tropical medicine, urology and venereology. To obtain the authorized title of "*spezialarzt*" (specializing physician) a doctor must have received special training in a medical establishment of high enough rating to guarantee an adequate preparation. Prerequisites of special training are as follows for the various fields: surgery four years (one year of which must represent training in another branch of medicine); dermatology two years plus one year in a second field; obstetrics four years plus one year in a second field; gynecology the same as for obstetrics; internal medicine with its subdivisions two years plus one year in a second field; neurology as a single specialty two and one-half years' study at a neurologic institute of university rank plus one-half year at a psychiatric clinic besides one year of additional study, half of which is to be spent in a medical clinic (that is, a clinic of internal medicine); ophthalmology three years of special preparation plus a recommended but not obligatory one year's study in a second field; orthopedics two years plus two additional years of surgery; otorhinolaryngology four years, of which at least two years is to be devoted to special training in this field and from one to two of the remaining years to the study of a second field; tropical medicine no particular stipulation, each case to be judged according to expediency; urology two years plus one year in a second field; venereology the same as for urology. These requirements are subject to modification in exceptional cases if the candidate succeeds in passing a special examination.

The customary procedure is for the central executive committee of the *Verbindung der Schweizer Aerzte*, with the approval of the society that represents the special field in Switzerland, to confer on all candidates completing one of the courses of training indicated above the title of "*spezialarzt*." Moreover, a doctor is permitted to specialize simultaneously in certain combinations of fields: surgery and gynecology, obstetrics and gynecology, dermatology and venereology, psychiatry and neurology.

On the other hand the Swiss *aerztekammer* has declined to recognize as special branches of medical science "forensic medicine," "laboratory research," "psychotherapy" and "tuberculosis." The rejection of the last named, "tuberculosis," means that work in the field of that disease is not regarded as constituting a separate category but rather as coinciding with the work of a recognized special sphere such as internal medicine (pulmonary diseases) or surgery.

## Marriages

DANIEL J. SULLIVAN, Trenton, N. J., to Miss Anne E. McKann of Samos, Va., in Washington, D. C., May 30.

GLEN WARD LEE, Anderson, Ind., to Miss Edith Anne Hoopingarner of Indianapolis, May 9.

MAX MARTIN GOULD to Miss Frances Matilda Schenker, both of Hartford, Conn., May 24.

HERMAN T. COMBS to Miss Mildred Ruth Long, both of Evansville, Ind., May 12.

CHARLES F. SCHNEE to Miss Ada Daniel, both of Maspeth, N. Y., May 20.

## Deaths

Frederic William Baldwin ♂ Danvers, Mass.; Harvard University Medical School, Boston, 1886; past president of the Essex South District Medical Society; formerly chairman of the board of health of Danvers; aged 74; one of the founders and on the staff of the Hunt Memorial Hospital; on the staff of the Beverly (Mass.) Hospital, where he died, March 7, of thrombophlebitis and pulmonary embolism.

Henry Harve Look, Kansas City, Mo.; Marion-Sims College of Medicine, St. Louis, 1899; member of the Missouri State Medical Association; formerly assistant professor of ophthalmology, University of Kansas School of Medicine, Kansas City, Kan.; served during the World War; for many years on the staff of St. Joseph Hospital; aged 59; died, March 14, of pneumonia.

Robert Aurand Allen ♂ Major, M. C., U. S. Army, Fort Wadsworth, N. Y.; Northwestern University Medical School, Chicago, 1906; served during the World War; entered the medical corps of the U. S. Army as a major in 1920; aged 58; died, February 8, in the Walter Reed Hospital, Washington, D. C., of myeloma and nephritis.

George E. Davis, West Mansfield, Ohio; Eclectic Medical Institute, Cincinnati, 1895; member of the Ohio State Medical Association; past president of the Logan County Medical Society; a member of boards of education in various towns; aged 75; died, March 20, in the Mary Rutan Hospital, Bellefontaine, of erysipelas.

Millard F. Hussey, Sidney, Ohio; Medical College of Ohio, Cincinnati, 1891; for many years a member of the board of education; at one time superintendent of the Lima (Ohio) State Hospital; formerly chief of staff of the Wilson Memorial Hospital and physician for the Shelby County Home; aged 79; died, March 12.

William Edward Knewstep ♂ Hampton, Va.; Medical College of Virginia, Richmond, 1911; formerly secretary of the Elizabeth City and County Medical Society; served during the World War; on the staff of the Dixie Hospital; aged 46; died, March 24, in the Johns Hopkins Hospital, Baltimore, of military tuberculosis.

Frank Thomas De Lano ♂ Rockville Centre, N. Y.; Albany Medical College, 1883; in 1904 served as president of what was then known as the Queens-Nassau Medical Society; for many years president of the bank, board of education, and public library; aged 79; died, March 28, of diabetes mellitus.

Alfred Henry Heald ♂ Berkeley, Calif.; University of California Medical School, San Francisco, 1931; instructor in pathology and roentgenology at his alma mater; on the staff of the Mills Memorial Hospital, San Mateo; aged 38; died, March 12, of cerebral embolus and chronic heart disease.

Frank Hayes Johnson, Carrizozo, N. M.; Chattanooga (Tenn.) Medical College, 1903; member of the New Mexico Medical Society; vice president of the state board of medical examiners; formerly county health officer; served during the World War; aged 53; died, March 19, of pneumonia.

William Cotman Whitmore ♂ Major, M. C., U. S. Army, Governors Island, N. Y.; Medical School of Maine, Portland, 1909; served during the World War; entered the medical corps of the U. S. Army as a lieutenant in 1917 and in 1929 was appointed a major; aged 51; died, April 17.

John Howard Johnson, Windermere, Fla.; Cleveland University of Medicine and Surgery, 1897; at one time a practitioner in Wauseon, Ohio, where he was a member of the board of education and county coroner; formerly mayor of Windermere; aged 62; died, March 20.

Milo Ruben Hewitt, Hartland, Wis.; Bellevue Hospital Medical College, New York, 1869; professor of obstetrics at the Milwaukee Medical College, 1894-1897; formerly on the staff of the Milwaukee County Hospital; aged 91; died, March 8, of bronchopneumonia.

George Sawyer Pitcher, Hampton, Va.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889; veteran of the Spanish-American War; for many years connected with the U. S. Public Health Service; aged 72; died, March 8.

Robert Lee Harris ♂ Cleburne, Texas; Marion-Sims College of Medicine, St. Louis, 1896; past president and secretary of the Johnson County Medical Society; owner and medical superintendent of the Cleburne Sanitarium; aged 69; died, February 9, of pneumonia.

Thomas Ellis Drewry, Griffin, Ga.; Atlanta Medical College, 1887; Jefferson Medical College of Philadelphia, 1890; member of the Medical Association of Georgia; aged 75; died, March 18, in the Strickland Memorial Hospital, of coronary occlusion.

Verner Paul Johnson ♂ Delano, Minn.; University of Minnesota Medical School, Minneapolis, 1927; president of the Wright County Medical Society; aged 34; died, March 18, in the Fairview Hospital, Minneapolis, of acute lymphatic leukemia.

Albert Fredrick Heising ♂ Menomonie, Wis.; St. Louis Medical College, 1890; past president of the Dunn County Medical Society; aged 70; died, March 27, in St. Joseph's Hospital, St. Paul, of carcinoma of the rectosigmoid with metastasis.

Addison Barrett Housholder, Lovettsville, Va.; University of Maryland School of Medicine, Baltimore, 1893; member of the Medical Society of Virginia; on the staff of the Frederick (Md.) City Hospital; aged 66; died, March 20, of heart block.

Stanley R. Hare, Batavia, N. Y.; Syracuse University College of Medicine, 1920; member of the Medical Society of the State of New York; on the staff of St. Jerome's Hospital; aged 39; died, March 26, of gastric ulcer and hemorrhage.

Frank J. Flannery, Baltimore; University of Maryland School of Medicine, Baltimore, 1880; for many years resident physician at the Mount Hope Retreat; aged 77; died, March 11, in St. Agnes' Hospital, of carcinoma of the prostate.

Jefferson Gould, Fenton, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1888; member of the Michigan State Medical Society; aged 84; died, March 21, of cerebral hemorrhage and arteriosclerosis.

Harry Cannon, San Diego, Calif.; Washington University School of Medicine, St. Louis, 1904; formerly state senator in Minnesota; aged 63; died, March 23, in the Mercy Hospital, of coronary occlusion, arteriosclerosis and hypertension.

Otto Herman Friedemann, La Grange, Ill.; Rush Medical College, Chicago, 1927; member of the Illinois State Medical Society; aged 38; died, March 29, in the Albert Merritt Billings Memorial Hospital, Chicago, of coronary occlusion.

Samuel J. Firestone, Cleveland; Fordham University School of Medicine, New York, 1916; served during the World War; on the staff of the Mount Sinai Hospital; aged 43; died, March 3, in the Cleveland Clinic, of pneumonia.

William McClure Leslie ♂ Blackwell, Okla.; Baylor University College of Medicine, Dallas, Texas, 1916; owner of a sanatorium bearing his name; aged 46; died, March 25, of streptococcal infection of the blood stream.

Richard Deyo Dugan, Springfield, Ill.; Missouri Medical College, St. Louis, 1899; member of the Illinois State Medical Society; served during the World War; aged 59; died, March 23, of coronary thrombosis.

Herman Christian Galster, Erie, Pa.; Cleveland Medical College, 1892; member of the Medical Society of the State of Pennsylvania; aged 73; died, March 17, in St. Vincent's Hospital, of hypertensive heart disease.

David Herbert Richardson, Celina, Ohio; Starling Medical College, Columbus, 1869; Medical College of Ohio, Cincinnati, 1879; member of the Ohio State Medical Association; aged 87; died, March 20, of heart disease.

Thomas Eggleston Burrows, Surrey, England; University of the City of New York Medical Department, 1877; L.K.Q.C.P., Dublin, Ireland, 1887; died, March 8, in Sherborne, N. Y., of bronchopneumonia and arthritis.

**Wenceslaus J. Hovorka**, St. Paul; Medical Department of Hamline University, Minneapolis, 1897; aged 78; died, March 27, in the Midway Hospital, following transurethral prostatectomy and osteomyelitis pubis.

**Peter N. Hoover** ☉ Boonville, Ind.; Kentucky School of Medicine, Louisville, 1881; past president of the Warrick County Medical Society; aged 84; died, March 31, of cardiac insufficiency and influenza.

**Dildy McCowan Austin** ☉ Belen, N. M.; Tulane University of Louisiana School of Medicine, New Orleans, 1930; aged 30; died, March 28, in St. Joseph's Hospital, Albuquerque, of amylal poisoning.

**Benjamin Franklin Cain**, Cincinnati; Marion-Sims College of Medicine, St. Louis, 1899; Medical College of Ohio, Cincinnati, 1900; aged 67; was found dead in bed, March 27, of heart disease.

**William James Hardy**, Belmont, N. Y.; New York Homeopathic Medical College and Hospital, 1889; formerly member of the board of education; aged 74; died, March 14, of myocarditis.

**John Fred Gordon**, Otway, Ohio; University of Louisville (Ky.) Medical Department, 1894; member of the Ohio State Medical Association; aged 66; died suddenly, March 27, of heart disease.

**Arthur Levi Knight** ☉ Cincinnati; Miami Medical College, Cincinnati, 1890; aged 69; formerly on the staff of the Good Samaritan Hospital, where he died, February 29, of lobar pneumonia.

**Frank Bozeman King**, Houston, Texas; Kentucky School of Medicine, Louisville, 1885; member of the State Medical Association of Texas; aged 72; died, March 14, in St. Joseph's Infirmary.

**Frank L. Baker**, Burlington, W. Va.; College of Physicians and Surgeons, Baltimore, 1889; member of the West Virginia State Medical Association; aged 74; died, March 24, of cerebral embolism.

**James Blain Hannah**, Addyston, Ohio; Medical College of Ohio, Cincinnati, 1885; member of the Ohio State Medical Association; aged 79; died, February 19, of coronary thrombosis.

**Frederic Theodore Underhill**, Vancouver, B. C., Canada; L.R.C.P., Edinburgh, 1881; F.R.C.S., Edinburgh, 1884; D.P.H., R.C.S., Edinburgh, F.P.S., Glasgow, 1897; died, February 17.

**Enrico Raffaele Gnasso** ☉ Fort Lee, N. J.; Birmingham (Ala.) Medical College, 1913; medical advisor for the local board of health; aged 55; died, March 22, of coronary sclerosis.

**Horace Winter Miller**, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; aged 70; died, March 6, of bronchopneumonia and mitral insufficiency.

**Charles Tom Cook Wilson**, Champaign, Ill.; Cincinnati College of Medicine and Surgery, 1890; aged 67; died, March 24, in the Carle Memorial Hospital, of cerebral hemorrhage.

**George W. Ragsdale**, Hiram, Ga.; University of Georgia Medical Department, Augusta, 1902; past president of the Paulding County Medical Society; aged 58; died, March 25.

**Samuel Holt Toy**, Umatilla, Fla.; Kentucky School of Medicine, Louisville, 1882; member of the Florida Medical Association; aged 85; died, February 24, of arteriosclerosis.

**George Nelson Drysdale**, Crescent City, Calif.; Halifax Medical College, Halifax, N. S., Canada, 1891; fellow of the American College of Surgeons; aged 69; died, March 15.

**Edward F. De Vaux** ☉ Fort Wayne, Ind.; American Eclectic Medical College, Cincinnati, 1893; aged 76; died, March 8, of myocarditis, diabetes mellitus and infective arthritis.

**John Tandy Stewart** ☉ Indianapolis; Eclectic Medical College, Cincinnati, 1928; on the staff of the Methodist Episcopal Hospital; aged 34; died, March 9, of chronic myocarditis.

**Norman W. Gustine**, Cleveland, Texas (registered in Texas by the State Board of Medical Examiners, under the Act of 1907); aged 81; died, in March, of heart disease.

**G. W. Nelson**, Marshallville, Ga.; College of Physicians and Surgeons, Baltimore, 1882; member of the Medical Association of Georgia; aged 73; died suddenly, February 26.

**Stanley Arnold Seigle**, Wyncote, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1932; aged 26; died, March 27, of Hodgkin's disease and cerebral embolism.

**James Marion Kerns**, Malad City, Idaho; Hospital College of Medicine, Louisville, Ky., 1898; served during the World War; aged 58; died, March 9, of cerebral hemorrhage.

**Henry Stokes Lott**, Winston-Salem, N. C.; University of Georgia Medical Department, Augusta, 1884; aged 75; died, March 28, of arteriosclerosis and cerebral hemorrhage.

**Oscar W. Brandon**, Pima, Ariz.; Central College of Physicians and Surgeons, Indianapolis, 1896; member of the Arizona State Medical Association; aged 63; died, February 26.

**James Henry Lancashire**, New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1883; died, March 6, in St. Augustine, Fla.

**Horace Landes Kulp**, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1895; aged 64; died, March 22, of cerebral hemorrhage and hypertension.

**George Carroll Smith**, Boston; University of the City of New York Medical Department, 1881; member of the Massachusetts Medical Society; aged 82; died, February 8.

**Nicholas Ignacio Ramos** ☉ Newark, N. J.; Baltimore University School of Medicine, 1890; aged 67; died, March 20, in the City Hospital, of hypertensive heart disease.

**Gaetano Rescigno**, Utica, N. Y.; Regia Università di Napoli. Facoltà di Medicina e Chirurgia, Italy, 1904; served during the World War; aged 57; died, March 11.

**Mary A. Keller Hendrickson**, Loup City, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1890; died, March 26, of cerebral hemorrhage and general debility.

**Samuel Levin Benson**, Fresno, Calif.; University of Maryland School of Medicine, Baltimore, 1883; formerly health officer of Barstow; aged 79; died, February 28.

**Nellie Louise Lawrence**, Boston; Woman's Medical College of Pennsylvania, Philadelphia, 1896; aged 73; died, March 4, of cerebral hemorrhage and arteriosclerosis.

**Frederick A. Kohn** ☉ Chicago; Rush Medical College, Chicago, 1904; aged 52; died, March 31, in St. Anthony's Hospital, of mercurial poisoning, self-administered.

**Junius Ambrose Rawlings** ☉ El Paso, Texas; University of Louisville (Ky.) Medical Department, 1889; aged 70; died, March 23, of influenza and bronchopneumonia.

**William J. Quigley** ☉ Lakewood, Ohio; Cleveland Homeopathic Medical College, 1903; member of the staff of St. John's Hospital, Cleveland; aged 56; died, March 8.

**Charles Abbott Blake**, West Brookfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1885; aged 84; died, February 17, of arteriosclerosis and glaucoma.

**Frederick William Main**, Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1884; aged 74; died, March 13, of pulmonary edema.

**William Sinclair Davidson**, Newland, N. C.; University of Maryland School of Medicine, Baltimore, 1887; aged 76; died, March 23, of carcinoma of the face.

**Charles Bell**, Washington, D. C.; Georgetown University School of Medicine, Washington, 1902; aged 58; died, February 27, of heart disease and chronic nephritis.

**Ernest Lincoln Averell**, Akron, Ohio; Baltimore Medical College, 1898; member of the Ohio State Medical Association; aged 69; died, March 10, of myocarditis.

**Forest Odessa Phillips Fleener**, New Sharon, Iowa; Hahnemann Medical College and Hospital, Chicago, 1910; aged 54; died, March 13, of diabetes mellitus.

**John A. Hilbert**, Wilkes-Barre, Pa.; College of Physicians and Surgeons, Baltimore, 1907; aged 59; died, March 22, of chronic myocarditis and arteriosclerosis.

**Edward W. Jardine**, Alma, Wis.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1906; aged 71; died, March 30, of cardiorenal disease.

**William Ross Brothers**, Duncannon, Pa.; Jefferson Medical College of Philadelphia, 1892; aged 67; died, March 1, of cerebral hemorrhage and myocarditis.

**William S. Nesbitt**, Dayton, Ind.; Kentucky School of Medicine, Louisville, 1887; formerly county coroner; aged 79; died, March 4, of chronic myocarditis.

**John Ralston Sudler**, Hockessin, Del.; Maryland Medical College, Baltimore, 1905; aged 46; died, March 6, in the Homeopathic Hospital, Wilmington.

**Nathan Wallace Abbott**, Cincinnati; Miami Medical College, Cincinnati, 1879; aged 82; died, March 29, of hypertrophic prostatitis and urinary obstruction.

**Claudius Pugh Hutchison**, Purcellville, Va.; Georgetown University School of Medicine, Washington, D. C., 1899; aged 60; died, March 5, of pneumonia.



**Byron Heston Ovenshire**, Bay City, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1879; aged 87; died, February 11.

**Charles Cushing Jackson**, Yeatesville, N. C.; College of Physicians and Surgeons, Baltimore, 1893; aged 70; died, March 29, of carcinoma of the stomach.

**Aleri Rogers Graham**, Petaluma, Calif.; Rush Medical College, Chicago, 1881; aged 81; died, February 1, of chronic myocarditis and multiple neuritis.

**William Henry Lee**, New Castle, Pa.; Hahnemann Medical College and Hospital, Chicago, 1886; aged 73; died, March 17, of pleurisy and chronic nephritis.

**John Hedlund**, Pasadena, Calif.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1893; aged 77; died, March 15.

**Emanuel J. Lupin** ☉ Philadelphia; Medico-Chirurgical College of Philadelphia, 1896; aged 73; died, March 10, of tuberculosis and arteriosclerosis.

**John Louis Chewett Cronyn**, Buffalo; University of Buffalo School of Medicine, 1876; aged 82; died, March 26, of myocarditis and arteriosclerosis.

**Frank Pyott**, Tiptop, Va.; Vanderbilt University School of Medicine, Nashville, 1898; aged 60; was found dead in bed, February 9, of angina pectoris.

**John Knox Polk**, Lexington, Ky.; Howard University College of Medicine, Washington, D. C., 1913; aged 52; died, March 12, in Lakeland, Fla.

**Hermann Frederick Erben**, San Francisco; Medizinische Fakultät der Universität Wien, Austria, 1926; aged 38; died, March 2, in Calcutta, India.

**David Frank Kline**, Philadelphia; Jefferson Medical College of Philadelphia, 1888; aged 72; died, March 13, of pyelonephritis and myocarditis.

**Donald Armand Betz** ☉ Omaha; University of Nebraska College of Medicine, Omaha, 1931; aged 29; died, March 25, in Bellevue, of pneumonia.

**Mary MacMillan** ☉ New York; Cornell University Medical College, New York, 1902; aged 72; died, March 18, of fracture of the hip and pneumonia.

**Thomas Joseph Grant O'Mara** ☉ New York; University of the City of New York Medical Department, 1895; aged 63; died suddenly, March 14.

**John Benjamin Matthew**, Blue Mound, Ill.; American Medical College, St. Louis, 1875; aged 85; died suddenly, February 16, of endocarditis.

**James Rhodes Hudson**, Alexandria, Tenn.; Vanderbilt University School of Medicine, Nashville, 1889; aged 76; died, March 1, of myocarditis.

**H. W. Orr**, Dublin, Ga.; University of the South Medical Department, Sewanee, Tenn., 1900; aged 75; died, February 14, of cerebral hemorrhage.

**Gustav F. Boucsein**, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; aged 75; died, March 27, of chronic myocarditis.

**Herbert Bowen Maxwell**, Garden Bay, B. C., Canada; M.R.C.S., England, L.R.C.P., England, 1906; aged 58; died in February, in England.

**Frank Pierce Pratt**, Seattle; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1883; aged 76; died, February 13.

**Rockwell B. Hubbard**, Sandusky, Ohio; Eclectic Medical Institute, Cincinnati, 1884; aged 80; died, February 10, of cerebral hemorrhage.

**Erle Leslie Biggs**, Starke, Fla.; Atlanta Medical College, 1914; aged 44; died, March 22, in St. Luke's Hospital, Jacksonville, of pneumonia.

**Curtis Thomas Hayden**, Charleston, W. Va.; Howard University College of Medicine, Washington, D. C., 1912; aged 51; died, March 12.

**Ezra S. Harroun**, Lyons, Ohio; Physio-Medical Institute, Cincinnati, 1884; formerly president of the school board; aged 83; died, March 5.

**Louis James Gordon**, Edwardsville, Ill.; St. Louis College of Physicians and Surgeons, 1899; aged 61; died, February 20, of myocarditis.

**Pierette Croisette**, Velpen, Ind.; American Medical College, St. Louis, 1897; aged 81; died, March 5, of influenza and bronchopneumonia.

**Joseph W. Duguid**, Dover, N. C.; University of Maryland School of Medicine, Baltimore, 1893; aged 64; died, March 28, of angina pectoris.

**Harry B. Faulder**, Wapakoneta, Ohio; Cleveland Homeopathic Medical College, 1901; aged 69; died, February 13, of cerebral embolism.

**Alfred Joseph Conwell**, Vineland, N. J.; Jefferson Medical College of Philadelphia, 1880; aged 80; died, March 11, of paralysis agitans.

**Ida Florence Barnes**, Beverly, Mass.; Boston University School of Medicine, 1893; aged 80; died, March 26, of carcinoma of the stomach.

**Everett E. Phillips**, Oklahoma City; Kentucky School of Medicine, Louisville, 1878; aged 80; died, March 20, in the City Hospital.

**Dorman Elroy Elbridge Haley**, Peoria, Ill.; National Medical University, Chicago, 1904; aged 56; died, March 21, of septicemia.

**Joseph David Vertin**, Phoenix, Ariz.; Loyola University School of Medicine, Chicago, 1916; aged 49; was found dead, February 24.

**William Chisolm Lucas**, Los Angeles; Denver College of Physicians and Surgeons, 1908; aged 49; died, March 16, in Tampa, Fla.

**Charles L. Moeller**, East St. Louis, Ill.; Missouri Medical College, St. Louis, 1887; aged 72; died, February 29, of cerebral hemorrhage.

**Ben Zion Kaufman**, Brooklyn; Long Island College Hospital, Brooklyn, 1902; aged 65; died, March 17, of coronary thrombosis.

**Seth Gordon Hastings**, San Antonio, Texas; Pulte Medical College, Cincinnati, 1877; aged 96; died, March 24, of hypostatic pneumonia.

**Albert Ernest Forbes**, Moncton, N. B., Canada; Halifax Medical College, Halifax, N. S., Canada, 1900; aged 59; died, March 17.

**John Leonard Reynolds**, Ozark, Ala.; University of Alabama School of Medicine, University, 1907; aged 65; died, March 23.

**Germain Laperriere**, Levis, Que., Canada; Laval University Faculty of Medicine, Quebec, Que., Canada, 1935; aged 29; died, March 3.

**Thomas A. Hightower**, Jacksonville, Fla.; University of Nashville (Tenn.) Medical Department, 1873; aged 85; died, March 9.

**August Andreas Klein**, Boston; Boston University School of Medicine, 1882; aged 88; died, February 20, of arteriosclerosis.

**Wilson H. Reed**, Omaha; Keokuk (Ia.) Medical College, 1898; aged 64; died, March 7, of influenza and acute endocarditis.

**Sidney White Rivenburg** ☉ Clifford, Pa.; Baltimore Medical College, 1894; aged 78; died, March 25, of pernicious anemia.

**Fred Leffinwill Hinman**, Los Angeles; Rush Medical College, Chicago, 1887; aged 75; died, February 1, of paralysis agitans.

**Joachim Guinane**, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1887; died, March 12, of pneumonia.

**John Cooper**, Pittsburgh; Hahnemann Medical College of Philadelphia, 1879; aged 81; died, March 21, of cerebral hemorrhage.

**Arvid Pihlblad**, Lindsborg, Kan.; Rush Medical College, Chicago, 1899; aged 61; died, March 7, of cerebral hemorrhage.

**Philip Gustav Dill**, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; aged 73; died, March 4.

**L. Lee MacPhee**, Boston; Tufts College Medical School, Boston, 1916; aged 47; died, March 13, in Cambridge.

**Emily C. Peterson**, Baltimore; Baltimore Medical College, 1883; aged 75; died, March 3, of bronchopneumonia.

**Morris William Beder**, New York; Long Island College Hospital, Brooklyn, 1910; aged 49; died, March 8.

**William Enoch Pollett**, Hickory Ridge, Ark. (licensed in Arkansas in 1903); aged 76; died, February 28.

**Tupper Kirby**, Los Angeles; Iowa Medical College, Des Moines, 1884; aged 81; died, March 6.

**T. J. Garner**, Washington, Ark.; Atlanta Medical College, 1884; aged 76; died, March 13.

## Bureau of Investigation

### HEALTH REMEDY PRODUCTS

#### "Health Anti-Tobacco" and "Health Anti-Liquor" Fraud Debarred from the Mails

From Kansas City, Mo., the Health Remedy Products exploited its mail-order tobacco and liquor "cures." The so-called "anti-alcoholic treatment" was typical of the age-old "can-be-given-secretly-at-home" buncombe, and the "new, easy and quick" tobacco "cure" was a fit companion. Fortunately, this duo of deceptions enjoyed a brief if profitable existence.

Initiated in 1933, it came to an abrupt demise in March 1936 on the declaration of the Postmaster General that the promoter, one G. S. Muchemore, had led the public to anticipate far more than the United States postal authorities deemed credible.

The Postmaster General has stated officially that the Health Remedy Products, G. S. Muchemore, Secretary, and their officers and agents as such, were engaged in conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises. In view of this, the postmaster at Kansas City, Mo., was instructed to mark "Fraudulent" and return to the senders all letters addressed to the Health Remedy Products and to refuse to pay any postal money orders to the concern.

The Health Remedy Products was conducted by the aforementioned Muchemore, sole owner, with the assistance of one female employe. Victims were secured by means of advertisements (of the we-want-to-help-you type) printed in numerous newspapers and periodicals. Typical advertisements of the tobacco and liquor nostrums read:

**QUIT WHISKEY**

The Health Remedy Products of Kansas City is now offering a NEW scientifically prepared treatment to aid men and women banish all desire for drinking. Thousands have already proved success of this New Easy Way. Can be given secretly. Write today for Free Booklet. Accept no substitutes. Write.

**Health Remedy Products** 2453 Manufacturers Exch. Bldg. KANSAS CITY, MO.

**QUIT TOBACCO**

The Health Remedy Products of Kansas City is now offering a NEW scientifically prepared treatment to aid men and women banish quickly all desire for smoking, chewing or snuff. FREE Thousands have already proved success of this New Easy Way. Write today for Free Booklet. Accept no substitutes. Write **HEALTH REMEDY PRODUCTS, Dept. 548, Manufacturers Exch. Bldg., Kansas City, Mo.**

The inquirer who succumbed to the lure of a Quit-Tobacco or Quit-Liquor advertisement received a lengthy printed form-letter. The liquor "come-on" letter read in part:

"Your letter of inquiry about the Health Anti-Liquor treatment has been received.

"It is a pleasure for me to write to one who is sincere in wanting to quit the drink habit, or is trying to help someone else who has not the will power to try and do this themselves, and I want to do what I can to help you by telling you about the wonderful easy way to take Health Anti-Liquor treatment which so many people say has helped them quickly leave off from all desire of drinking . . ."

Although the promoter inferentially implies in his letter to the prospective victim that he had been a liberal imbibor of alcohol until saved by the "new and easy mixture," he confessed to the post office inspector who investigated the case that he had never taken the "treatment." The letter further stated that "drunkenness is a monster that steals both health and money"; it might well have truthfully added that the Health Remedy Products was equally proficient in achieving a similar result. The Anti-Liquor circular declared its treatment to have been discovered many years ago by an old German physician (the name of this eminent person was not given). Somehow it is usually an Indian chief or an old German physician!

Wives, mothers and sweethearts were assured that the "cure" could be administered secretly. The Bureau of Investigation, in similar exposés, has repeatedly called attention to the fact that there is no drug or combination of drugs known that may be administered either secretly or with the patient's knowledge that will "cure" the desire for alcohol. The principal causative factors in the urge for alcohol are psychic. All methods toward rehabilitation are doomed to failure unless the mental conflicts are removed which bring about the desire to escape from reality by means of the alcoholic "spree." There is no sovereign remedy that will supply will power where none exists.



Front cover of a Health Remedy Products circular (greatly reduced).

If the prospective victim seemed reluctant to part with his money for the "reliable and scientific" old German discovery, Mr. Muchemore became so perturbed that he sent form-letter number two. In this epistle the exploiter expressed a righteous indignation that his desire to aid suffering humanity had failed to meet with a prompt remittance. "I felt sure," he scolds, "that you were serious in wanting to free someone from one of the most terrible curses in the world today, and I only hope that you have not weakened [italics ours] from this thought."

To make doubly sure that the victim did not weaken, the trap was cunningly baited with the usual "patent medicine" money-back guarantee. To the unsuspecting the proposition sounded extremely honest and straightforward. All the unfortunate prospect had to do was to take the medicine as directed and then give the "treatment" time to work. If the same old urge to drink returned, all that was necessary was simply to write the Health Remedy Products' office and the money would immediately be returned in full. Just how long an interval Mr. Muchemore felt should be allowed for the treatment to work was not stated; people who claimed they had tried the "Health Anti-Tobacco Treatment" without securing the promised results, failed to get their money back after requesting the promoter to refund it.

While Mr. Muchemore claimed that the Health Remedy Products' Anti-Liquor Treatment was a "new, reliable and scientific method" of treating drunkenness, the post office authorities stated that, according to chemical analysis, the stuff consisted of the "acorns of white oak, roasted, ground and combined with about twenty per cent alcohol by volume," and that the principal therapeutic agent of this preparation was nothing more than tannin from the acorns.

Whether the same "doctors and chemists" who were so eager to aid men and women to quit the liquor habit had another spasm of scientific altruism and compounded the anti-tobacco nostrum, the advertising matter does not state. However, chemical analysis, according to the postal authorities' report, disclosed this "new scientifically prepared treatment" to be "composed essentially of lobelia, nux vomica, gypsum, milk sugar, capsicum, ipecac, powdered elm bark, licorice and corn starch." They left out the "kitchen stove"!

These worthless nostrums, stripped of their advertising falsifications, stand convicted as more heartless demonstrations of the iniquity of the "patent medicine" business, whose callous indifference to truth has caused untold suffering among people who can ill afford such treachery.

## Correspondence

### BRADYCARDIA WITH HYPOGLYCEMIA

To the Editor:—Ormond (THE JOURNAL, May 16, p. 1726) says he has not been able to find reports of the occurrence of bradycardia with hypoglycemia.

Manfred Sakel has reported many such observations in the course of his insulin shock treatment of schizophrenia. His publications are a valuable source of data on the clinical manifestations of hypoglycemia. In his monograph "Neue Behandlungsmethode der Schizophrenie," for example (Vienna, Verlag von Moritz Perles, 1935) he states (p. 9) that "a very marked bradycardia sometimes reaching thirty-four beats a minute is characteristic of uncomplicated progressive hypoglycemia." But where there is a strong compensatory epinephrine reaction, or convulsions, he correctly observes, the cardiac response is different.

JOSEPH WORTIS, M.D., New York.

### POTENCY OF ANTIANEMIC PREPARATIONS

To the Editor:—The editorial on the potency of antianemic preparations in THE JOURNAL, April 11, prompts me to comment on the obvious inadequacy of the method for determining the quantitative potency of liver substitutes prescribed by the Council on Pharmacy and Chemistry.

Determination of the potency of such substances, as specified by the Council, is to be made on the basis of the magnitude of the reticulocyte response induced by the administration of the liver substitute. Although such a response has been used as an indication of qualitative potency of liver and substitutes for it since the introduction of liver therapy, it has been almost uniformly recognized that the magnitude of this response is not necessarily a measure of the power of a substance to produce erythrocytes, which is the fundamental problem concerned in the treatment of pernicious anemia. Not only will certain substances not effective in stimulating erythrocytes produce a reticulocyte increase, but it has been adequately demonstrated that a maximum or satisfactory reticulocyte response may be induced quite as well by such a small amount of liver substance that only a subminimal erythrocyte increase will be induced as by means of a much greater amount of potent substance which will produce an optimal erythrocyte increase.

Sufficient data are now available in both our own and foreign literature based on initial erythrocyte responses to liver therapy administered in various ways, and on maintenance requirements, so that the efficacy of the liver substitutes may be readily and relatively accurately evaluated on a quantitative basis. In fact, published data indicate that both here and abroad evaluations of potency have been made not alone on the basis of the magnitude of the reticulocyte rise but on the basis of the initial erythrocyte increases, usually during a period of one month, and/or the maintenance requirements in all but one large clinic.

The editorial in one place makes the following comment: "The foregoing illustrates the confusion that is possible in estimating comparative antianemic potencies and emphasizes the necessity for standards such as the Council on Pharmacy and Chemistry has devised." Had the Council initiated standards for determining "comparative antianemic potencies" based on evaluation of the efficacy of substitutes for liver to produce erythrocytes and to maintain them at a normal level instead of resorting to a method open to all sorts of variation and interpretation, the problem of evaluating the efficiency of one particular extract would not have assumed the almost colossal proportions which it has.

It is hoped that the committee on revision of the Pharmacopeia will benefit from the experience of the Council and that the evaluation of the various liver substitutes for inclusion in the new edition may be made on the basis of their effect on erythrocyte production and maintenance.

WILLIAM P. MURPHY, M.D., Boston.

### INCIDENCE OF CESAREAN SECTION

To the Editor:—In a paper on the training of medical students in obstetrics (THE JOURNAL, April 25, p. 1435) I inadvertently committed an error in comparing the incidence of cesarean section in American with foreign institutions. It was stated that the incidence at the Boston Lying-In Hospital was 1 to 12 and at the Jefferson Hospital in Philadelphia 1 to 6 during the period 1929-1930. Dr. Frederick C. Irving, visiting obstetrician to the Boston Lying-In Hospital, and Dr. P. Brooke Bland, attending obstetrician to the Jefferson Medical College Hospital of Philadelphia, have each protested the correctness of my statements. Dr. Irving informs me that the incidence of cesarean section at his institution was 1 in 32.7 in 1929 and 1 in 27.5 in 1930, while Dr. Bland states that during the period from 1925 to 1935 the percentage has been 1.6, or less than one in fifty deliveries. While I regret any offense or injustice that might be attributed to my statements, may I state that my figures were obtained from the Report on Maternal Mortality in New York City, 1930-1932, made and published by the New York Academy of Medicine. I find on further investigation that tabulations on the incidence of cesarean section in the United States, from which the Academy Report figures evidently were derived, appeared in the following articles: Davidson, A. H.: *Irish J. M. Sc.*, December 1931, pp. 642-654. Miller, C. J.: *Surg., Gynec. & Obst.* 48:745 (June) 1929. Gellhorn: *Progressive Medicine* 3:93 (Sept.) 1930.

Following the receipt of the protests I made an effort to locate the original sources of the statistics noted in Dr. C. Jeff Miller's paper but was unable to do so. In a letter subsequently published in *Surgery, Gynecology and Obstetrics* (50: 512 [Feb.] 1930) in which he acknowledges the error, Dr. Miller states that he quoted from a source which he had every reason to believe accurate and reliable.

Evidently an error has been committed by the publication of statistics from the two hospitals in question which are palpably false and I regret very much having become involved in their further dissemination. However, I have been led to a further search and find that, unfortunately, there are other centers of obstetric activity in this country from which equally high cesarean incidences were reported. I will refrain, however, from any further discussion of this subject at the present time and merely desire to reaffirm my regret for having included the two hospitals referred to in the contention expressed in my paper; namely, that the incidence and consequent mortality associated with cesarean section is much too high in this as compared with other countries.

GEORGE W. KOSMAK, M.D., New York.

## Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

### DIAGNOSIS IN DISORDER OF NERVOUS SYSTEM

*To the Editor:*—A woman, aged 53, highly nervous, complained of inability to move either foot and loss of sensation in same. I saw the patient March 14, two days after the onset of the complaint. The previous history was essentially negative, except that she had a scare the day before the onset of the complaint. Physical examination showed both feet dropped, and inability to flex the feet or ankles or to move the toes. The muscles in the calves of both legs were apparently flaccid. There was no sensation to pin pricks on the lateral aspect of both feet; sensation was intact above the ankles and on the medial aspects of the feet. Sensitivity of the soles of the feet could not accurately be determined because of callus. Deep muscle and joint temperature sensation was intact in all areas. Patellar reflexes were slightly diminished but equal. Babinski and Gordon reflexes and ankle clonus could not be elicited. The heart was fibrillating. The blood pressure was 250 systolic, 120 diastolic. Blood analysis showed: hemoglobin 55 per cent; red blood cells 3,100,000. The red cells were well formed, with no poikilocytosis or anisocytosis. The sugar content was 0.201. Analysis of the urine revealed 1.4 per cent sugar. Since she was first seen the patient has regained movement and sensation in the right foot. There is slight improvement in sensation of the left foot and the patient claims that she can feel slight muscle movement in the left foot, but this is not apparent to the examiner. For the past few days she has complained of numbness and tingling of both feet and of the left hand. The blood pressure has fluctuated between 260 and 220 systolic with diastolic at 120. Any suggestion in diagnosis and therapeutics in this case would be greatly appreciated. Please omit name. M.D., Long Island.

*ANSWER:*—While the onset of a paralysis in a nervous patient following fright and the failure of changes to group themselves in typical fashion suggest hysteria, the impression is one of organic disability. Ordinarily in hysteria, if anesthesia accompanies paralysis, the two generally cover the same area.

The rapid onset is suggestive of a vascular basis, and with a fibrillating heart the possibility of multiple embolisms exists. Should this be responsible, one would expect a change in the color and temperature of the affected extremities and interference with the pulsation of the dorsalis pedis and posterior tibial arteries and possibly of the left ulnar and radial arteries. When sensory changes accompany such an infarctive paralysis they are usually more of the stocking and glove type than was observed here, and there is usually a considerable element of pain. In a case of a few hours' duration, papaverine, through relaxation of the collateral circulation, is of benefit, but it is not helpful at a later stage.

A peripheral neuritis would hardly make its appearance so abruptly, and the sensory changes are hardly in keeping with the muscular involvement. Was the Achilles tendon reflex absent?

A lesion of the spinal cord in the segments subserving the distribution of the fourth lumbar to the second sacral nerve, as judged by the paralysis, or of the first sacral, as judged by the disturbance in sensation, is also suggested. With the changes noted the disorder would suggest a radicular involvement, which also is not in keeping with the sudden onset. A lesion within the cord itself, such as a hemorrhage, which is not a common occurrence, could be the cause, but the hamstring muscles, the gluteus maximus and medius, and the rotators of the thighs would probably be involved as well. A larger lesion would interrupt the function of the lower part of a cord. A perianal area of sensory disturbance easily escapes detection, but the sphincters were presumably intact. Examination of the spinal fluid may be helpful, should the development of the case be in keeping with such a possibility. In this event the paresthesias in the left arm would remain unexplained.

An unlikely possibility is a bilateral cerebral lesion at the tops of the Rolandic fissures. In these cases the disorder is usually on the venous side of the circulation; Jacksonian attacks are usually present, and Babinski's sign is usually positive.

The hypertension and the increased blood sugar would seem to have laid the foundation of the disorder but are hardly immediately responsible. These should be treated with due care and as far as it is possible. Heat applied to the extremities would be a safe recommendation, it being borne in mind that a sensory disturbance exists and that care must be exercised to prevent a burn.

### SPINAL FLUID IN SYPHILIS

*To the Editor:*—What is the proper interpretation of a spinal fluid examination in regard to syphilis? Please discuss: 1. Cell count. 2. Globulin. 3. Colloidal Gold. 4. Pressure. How should these findings be evaluated? Please omit name. M.D., Pennsylvania.

*ANSWER:*—1. Normally there are from 3 to 7 cells per cubic millimeter. A moderate increase in cells, from 10 to 100, with the lymphocytes predominating is found in all forms of neurosyphilis. An increase in cells to 1,000 with lymphocytes predominating is also found in acute syphilitic meningitis.

2. Normally cerebrospinal fluid contains from 15 to 45 mg. of protein per hundred cubic centimeters of fluid. This amount gives a negative test for globulin as usually made. This protein consists mostly of albumin with a small amount of globulin. In most conditions, protein and cell increase go together. Occasionally one may increase more than the other, giving dissociated values. A slight increase in globulin, at 1+ reaction, is found in neurosyphilis. A moderate increase in globulin, a 2+ reaction, may occur in dementia paralytica. A great increase in globulin, 3+ or 4+ reaction, is found in spinal or cerebrospinal meningitis, especially of the syphilitic and epidemic types.

3. Normal cerebrospinal fluid does not precipitate any of the colloidal gold. A strong reaction in low dilutions is known as a paretic curve and is characterized by a 5554321000 curve, but may be weaker. It may be present in dementia paralytica, secondary syphilis, meningovascular syphilis, tabes dorsalis, multiple sclerosis and brain tumor. A strong reaction in medium dilutions is known as the tabetic or luetic curve and is characterized by a 0244310000 curve. It occurs most often in tabes dorsalis, meningovascular syphilis and poliomyelitis. A strong action in high dilutions is known as a meningeal curve and is characterized by a 0011222333 to a 0000245530 curve. It is found in practically all the acute meningitides.

4. The normal cerebrospinal fluid pressure is from 100 to 150 mm. of water when the patient is lying on the side, and from 200 to 300 mm. of water when the patient is sitting up. The pressure is increased in cerebral syphilis. Clear fluid is obtained in central nervous system syphilis. Occasionally xanthochromic fluid is also obtained in meningovascular syphilis.

### INDUSTRIAL DISEASE

*To the Editor:*—A man of 48, who has always been strong and wiry, complains of a gradual increasing weakness of a year's duration. He also has a sensation of epigastric fullness and weakness, especially with exertion. He has nausea frequently in the morning, yet he never vomits. These symptoms do not seem to be connected with meal time or food in any way. A precordial oppression is often associated with the epigastric fullness, yet this has been relieved considerably with belladonna. There is no constipation and the stools have been unformed for a year. At times he has noted undigested food particles in the stools. He is losing weight gradually and his appetite has vanished. Although he was said to have pulmonary tuberculosis fifteen years ago, there have been no pulmonary symptoms in years. Physical examinations have been repeatedly negative. The heart and lungs and the possibility of a neurosis have been ruled out clinically to my satisfaction. Laboratory examinations have given results within normal limits. The white blood cells number 7,300, red blood cells, 4,700,000, hemoglobin 75 per cent. The urine is normal. The stools are negative for parasites, yet they show undigested meat particles. Gastric analysis falls within normal limits. Sputum examination and the Kahn test are negative. The man works for a gas company and throughout the day he must go down into excavations and weld gas pipes with an acetylene torch. He uses no mask. Could the latter fact have any bearing on this case? Kindly omit name. M.D., Florida.

*ANSWER:*—It is a safe rule in medicine regularly to be suspicious of the unusual. Applying this rule to the present instance, there probably are many more causes of this condition unrelated to work than to the contrary. There are, however, a few possibilities, and these are now mentioned. In carrying out welding work in excavations or enclosed areas, the hazards are greater than would obtain in open air conditions. Various metal fumes are created, together with the possibility of carbon monoxide gas. Remotely there is a possibility of the formation of sulfureted hydrogen or arseniureted hydrogen, due to impurities in the acetylene gas. This possibility is less now than in earlier years, as the result of more highly purified acetylene. The typical action of the gases and fumes produced by welding is on the respiratory tract. Severe pulmonary edema is possible and pulmonary hemorrhages probably may arise. Pneumonia among welders occurs at a higher rate than for workers in general. Gastro-intestinal disorders as the exclusive manifestation of the action of welding gases and fumes and in the absence of involvement of the respiratory tract would be unusual. In the case of welding on galvanized metals, gastro-intestinal disturbances are common and may arise in the absence of associated involvement of the respiratory tract. In metal fume fever

and zinc chills arising from exposure to zinc fumes, loss of appetite and nausea are almost constant manifestations among others. The precordial oppression mentioned in the query may be of significance and the gastric disturbance may stand in relation to a cardiac condition. It is reasonably well established that the gaseous products of welding may exert an unfavorable action on the heart. It is the intent of this discussion merely to point out that there may be certain possible connections between this patient's condition and his employment. But no warrant exists for a definite stand that the condition described may with certainty be laid to welding work as its primary cause.

#### DESQUAMATION IN MILD SCARLET FEVER

*To the Editor*—Is there any other disease besides measles, scarlet fever and exfoliative dermatitis that is characterized by exfoliation? There was an epidemic here all summer of what some of us think is a mild scarlet fever, while others are calling it a streptococcal sore throat with a rash and exfoliation. Most of the patients were not sick enough to go to bed. The disease is characterized by a rather mild sore throat with slight redness or the typical blood red throat of scarlet fever, with a rather light rash of the abdomen of punctate type. Sometimes there is merely an edema of the skin with some erythema. Some patients have sore tongues and some have complained of soreness of the skin of the palms. Most of the patients have been ill for from four to five days with recovery and in a week or so there has been an exfoliation of the palms of the hands and tips of the fingers. The disease is more contagious than typical scarlet fever, often running through an entire family, but in no instance has an albuminuria followed. Most of the cases are not as severe as an attack of tonsillitis. Scarlet fever serum has been used twice and in one case gave a good result and in another case gave a questionable result. There have been one or two cases out of perhaps forty in which there was otitis media. Kindly omit name. M.D., Nevada.

**ANSWER**—German measles is sometimes followed by a fine branny desquamation. However, the desquamation of German measles is not observed on the palmar or plantar surfaces. Certain drugs, notably arsenic, may also produce either a mild or severe desquamation. Foods may act similarly in allergic individuals.

From the description it seems almost certain that the disease referred to is mild scarlet fever. It might further confirm the correspondent's opinion in this respect if Dick tests were made on all patients following their recovery. A very high percentage of negative Dick tests would be strongly suggestive that immunity had resulted from an attack of scarlet fever.

#### INJECTION TREATMENT OF HEMORRHOIDS AND HYDROCELE

*To the Editor*—Is sodium morrhuate 5 per cent a satisfactory drug to use in the injection treatment of internal hemorrhoids? What advantage has quinine and urea hydrochloride over sodium morrhuate or vice versa? How much time should elapse before an internal hemorrhoid can be re-injected? Can satisfactory results be obtained by the injection of sodium morrhuate or other drugs into a hydrocele of the tunica vaginalis testis and, if so, please outline the technic. Please omit name and post office address. M.D., Virginia.

**ANSWER**—A 5 per cent solution of sodium morrhuate is satisfactory for the injection of internal hemorrhoids in the absence of infection, fissures and fistulas. Occasionally a dilation of the sphincter may be necessary. Quinine and urea hydrochloride are more apt to produce necrosis. Patients sensitive to quinine may develop dangerous, occasionally fatal, reactions. Five per cent phenol in vegetable oil is favored by a great many proctologists. Much more important than the selection of the sclerosing solution is the proper selection of the suitable case, which requires a thorough understanding and recognition of the pathologic processes in the rectum. Injections may be made once or twice a week, depending on the reaction following injections.

The treatment of hydrocele by injections of sodium morrhuate is started by washing out the sac first with sterile physiologic solution of sodium chloride followed by the injection of from 4 to 5 cc. of the drug. To tap the sac the skin must be carefully sterilized with a suitable antiseptic. A dermal wheal is then produced with 1 per cent procaine hydrochloride and a spinal puncture needle is used to tap the sac. The fluid should be completely removed, care being taken that the needle still remains free in the cavity and is not caught in the wall of the sac.

Before deciding on the injection treatment of a hydrocele, gonorrheal, tuberculous or nongonorrheal epididymitis and a tumor of the testicle must be excluded. Such lesions may become palpable after the sac has been tapped. One must also make certain that there is no communication with the peritoneal cavity such as occurs in the congenital type of hydrocele and that there is no associated inguinal hernia. The latter may become irreducible if the hydrocele is obliterated.

#### HEADACHES AND MENSTRUATION

*To the Editor*—Mrs. W., aged 26, never pregnant, was never seriously ill in the past. She had a tonsillectomy and adenoidectomy in 1931 and an appendectomy in 1932. During her convalescence she developed a cystitis and pyelitis following catheterization. This condition lasted about five weeks and cleared up. She had two slight recurrences of the same malady but each time it cleared up quickly. Menstruation began when she was 14, the flow being markedly irregular until the time of her marriage, three and one half years ago. At all times the flow is very scanty, stringy and mucous; the last four months witnessed an exceedingly scant flow, lasting not even twenty four hours. The menses are painless. While in training to be a nurse she had a dilation and curettage and was given some "injections" with the hope that her flow might become more profuse and more regular, nothing was accomplished, however, beyond establishing a somewhat more regular flow. The patient had "terrific" reactions following the injections, and the latter had to be abandoned. During the appendectomy the patient's pelvic organs were examined and found normal (apparently). The family history is negative save for the fact that her mother had what doctors considered "migraine" headaches. The patient is a native of one of the Southern states and her headaches (the chief complaint) started with her coming east three and a half years ago. The following is her description of the headaches and what goes with it: "The headaches are severe, peculiar, irregular as to time of appearance, there being no particular cause that would start them. The headache begins at the root of the nose, spreads to the malar bones, and many times there is a sensation of 'pinching' in the back of the neck. The neck feels 'stiff' and is never relaxed. The pain then travels to the shoulders and to the spinal column halfway down. There is no nausea. There is a sensation as if the eyes 'pop' out of the orbits, and there is a constant desire to draw the head backward. There is a throbbing in the temples, and for more than a year with the headaches there was been a sharp, needle-like 'shooting' in any part of the body. This 'shooting' is of very short duration; it 'darts' through the part and ceases. These headaches leave me in a very weak condition and are followed by marked perspiration of the palms of the hands and the axillae." The patient lost 10 pounds within a year. She is very nervous and irritable and oftentimes is depressed. Her reflexes are exaggerated. The blood pressure is 112 systolic and diastolic. The eye-grounds are normal. The sinuses are normal. The blood picture is normal. The ninety skin tests for possible allergy were negative. There is no postnasal discharge. The last urine examination showed a specific gravity of 1.030, marked acidity, albumin, pus cells, many epithelial cells, many casts and many finely granular casts. Fehling's solution turns yellowish green on standing. Roentgen examination shows apparent osteomatous change in the right posterior ethmoid cell and unerupted, impacted third molar teeth. The teeth were extracted with no relief. The roentgen examination according to the eye, ear and nose man do not account for the headaches. The Wassermann test is negative. All urine examinations until the last were usually negative, but the specific gravity kept creeping upward, it started with 1.005 in 1932 and went up to 1.030 in 1935. Physical examination is negative save for the fact that of late the patient feels a dull pain along the path of the right ureter. Pressure over the shoulders, the back of the neck and along the sternocleidomastoid muscle reveals distinct pain. The physicians who have treated the patient are inclined to believe that there is a hysterical basis underlying the condition that accounts for all these symptoms. It is my belief, however, that there is apparently some organic lesion (not omitting the hysteria part), perhaps a hypofunctioning gland or glands, perhaps the ovary, as one may deduce from the menstrual history of the patient. I would greatly appreciate your kindness if you would give me your opinion regarding this case and, if possible, an outline for some course of treatment. Kindly omit name.

M.D., Connecticut.

**ANSWER**—The patient's own minutely detailed description of the character of her headaches would seem to lend some support to the suspicion that a hysterical element may exist, and yet there are other features of the case that call for investigation. No mention is made of the frequency of the headaches, but presumably their occurrence is not limited to any part of the menstrual cycle. It is unlikely that the hypomenorrhea, which is the only menstrual symptom, is a causative factor, though it should be of interest to make studies of the urinary hormone excretion, if this is practicable. The headaches do not suggest migraine, which is often preceded by an increased output of follicle stimulating factor. If other studies, to be mentioned, do not throw light on the problem, it would be permissible to try, experimentally at least, the hypodermic use of an estrogenic preparation, preferably one of the oily solutions. A dosage of about 2,500 international units two or three times a week could be tried throughout one cycle at least.

A rather significant statement is that the headaches date from about the time of a sharp postoperative pyelitis and cystitis, and that the urine still shows pus and albumin, as well as casts. Furthermore, the patient now suffers with "dull pain along the path of the right ureter." Certainly a thorough urologic examination would seem in order, including pyelography. It is quite possible that the headaches may be of toxic nature and that the focus of infection may be a renal one, with possibly a stricture of the ureter. In such cases dilation of the stricture should relieve the pain along the ureter and may also help the headache and other symptoms. Other possible foci seem to have been adequately considered.

## HYPERTHYROIDISM

*To the Editor*—Twelve years ago I treated a patient, aged 42, for enlargement of the thyroid gland with mild tachycardia and slight nervousness. She was then in the menopausal state. The enlargement disappeared and she seemed improved and then discontinued medication. Three weeks ago she consulted me for tachycardia (150), nervous tremor, loss of weight and exophthalmos. She has no appreciable enlargement of the thyroid; in fact, I believe that the gland has almost disappeared. She is anemic, weighs 102½ pounds (46.5 Kg) and has 70 per cent hemoglobin. The urine is normal. My diagnosis is hyperthyroidism. The blood pressure on the first visit was 158/90, the second 152/70, the third 150/71, and the fourth 144/70. The pulse rate now is 108. The heart sounds are good, there are no murmurs and no irregularities. Digitalis, instead of raising the blood pressure, appears to be lowering it. I am prescribing along with digitalis some bromides and belladonna. The patient feels better but I do not know why she should show symptoms of hyperthyroidism with hardly any thyroid gland and why the blood pressure should fall steadily under medication that usually raises the blood pressure. It is possible that she was "kidding herself" in a false sense of good health during the intervening twelve years, but the thyroid is practically gone. I do not believe there is anything surgical in this case now. Have you any suggestions to make? I believe I have a case of toxic hyperthyroidism that is going to be very unsatisfactory to treat. Please omit name.

M D, New York.

**ANSWER.**—In exophthalmic goiter the average weight of the thyroid gland corresponds to the intensity of the hyperthyroidism. The ratio of the average basal rate to the average weight of the gland in grams is approximately one to one. While these averages are true, extreme variations take place.

In the majority of cases of exophthalmic goiter, enlargement of the thyroid gland is evident on palpation, if not on inspection. In a small percentage of cases the thyroid gland, even though enlarged, is not palpable. The portion of the thyroid gland remaining after thyroidectomy is palpable in the majority of cases of recurrence of hyperthyroidism. In a small percentage of cases it is not, and in rather rare instances the surgeon has difficulty in finding any remnant of the thyroid gland at the time of the secondary exploration. In most instances, even if there is only a small remnant, its removal satisfactorily drops the metabolic rate and relieves the patient.

## ERUPTIONS IN LUMBER WORKERS

*To the Editor*—In recent years since the virgin yellow pine timber has been exhausted in this section of the country, sawmills have been cutting second growth or sappy pine and, in order to prevent it mildewing or turning blue, various chemicals are being used as a dip for the lumber to preserve its natural color. October 24 I saw a patient who has come in contact daily with lumber so treated and his body gets damp with this solution. As a result his arms, legs and body have broken out in a raised eruption, from the size of a small shot to larger than a split buckshot, most of these places develop a pustule at the crest or peak. The solution being used in this case, I am told, is called Dowicide, and I believe it is made in New Orleans but I am not sure. I thought possibly that you might know what chemicals are in this solution and what may be the injurious element and the treatment for the condition. Please omit name.

M D, Mississippi.

**ANSWER.**—"Dowicides" represent a series of chlorinated phenolates. "Dowicide-H" is sodium tetrachlorophenoxide. These substances are believed to be made by the Dow Chemical Company of Midland, Mich., but in the South are distributed and serviced by the Chemical Treatment Company, Incorporated, in New Orleans. A large number of other substances, or have been, used as fungicides, such as mercury bichloride, potassium dichromate, creosotes, pine oil, arsenic compounds, sodium carbonate, calcium hypochlorite, carbonyl sulfide, ethylmercuric chloride and ethylmercuric phosphate. Many of these substances constitute distinct skin irritants and bring about a true occupational dermatitis when exposure is provided. Chapman, in "Chemical Control of Sap Stain in the South" (*Southern Lumberman* 149:82 [Dec. 15] 1934) says:

One difficulty which has been encountered with the chlorphenolate treatments when used in hand dipping vats has been the matter of irritation. A certain proportion of workmen who continually dip their hands in such solutions have been found to be susceptible to this irritation, which appears as a rash on the hands and forearms. Its occurrence is confined to mills using hand-dipping vats, workmen handling freshly dipped lumber at mills where automatic vats are used are very rarely troubled with it. For those who are bothered with this irritation, the prior application to the hands and forearms of ordinary engine oil or grease has been found very helpful. Experimental work with materials which could be added to the compound to prevent or greatly reduce such irritating effect is now under way, and it seems likely that further trouble from this source will soon be eliminated.

The skin lesion specified in this query undoubtedly is a result of exposure to Dowicide, although lack of personal cleanliness may have been a contributory factor, and a secondary entry of pyogenic bacteria or fungi may have complicated the original dermatitis venenata. Preferable to applications of "engine oil

or grease" is a protective coating made up of 75 per cent hydrous wool fat, 24.5 per cent olive oil and 0.5 per cent phenol. This preparation becomes rancid in time and containers require servicing. Although animal and vegetable fats are superior to mineral oils, white petrolatum containing 10 per cent camphor may be used. In the absence of sustained exposure, almost any bland treatment will eradicate this dermatitis, provided it is uncomplicated by a mycotic dermatitis. To soak with aluminum acetate or potassium permanganate is efficacious. Ten per cent zinc oxide in olive oil is useful, particularly after the acute state has passed. If complicated by the action of fungi, much more elaborate treatment may be required, including such medicaments as Whitfield's ointment, solutions of crystal violet dye or certain mercurials. Under any circumstances patients should avoid the use of harsh soaps, and particularly should eschew clean-up methods that include gasoline, benzene, naphtha or other hydrocarbons.

## VITAMIN B IN ANEMIA

*To the Editor*—My reading on the subject of the administration in true pernicious anemia of vitamin B in the form of yeast leaves me with the impression that this source of vitamin B requires being acted on by normal gastric juice. Is this impression correct? If so, such treatment would be impracticable in routine practice. If yeast is used for its vitamin B, what may be regarded as a necessary daily amount? Are tablets of from 6 to 7½ grains (0.4 to 0.5 Gm.) satisfactory? If Embo (General Mills, Inc.) is used for its vitamin B, what is the necessary daily amount to be effective, and may benefit be expected in the absence of a normal gastric juice, an achylia? Please omit name.

M D, California.

**ANSWER.**—The work of Castle and others has shown that yeast acted on by normal gastric juice is effective in bringing about a remission in pernicious anemia. Vitamin B, given in the form of yeast, is usually prescribed at the present time because of its general effect rather than for any specific effect on the lesions of pernicious anemia.

It may be given either as powder or as tablets, and it is customary to prescribe a level teaspoonful two or three times a day in the form of powder, or its equivalent in tablets. If Embo is given, the dosage is two or three teaspoonfuls each day.

The only benefit that could be expected would be from the general effect of giving these substances rather than from any specific effect on pernicious anemia. It is common practice to give both brewers' yeast and cod liver oil as adjuncts in the management of pernicious anemia. However, there are no scientific data to show that patients with pernicious anemia who are receiving adequate potent material (liver, stomach) get a better result when on a diet containing large amounts of these substances than when on just a well balanced diet.

## FOOD AND COLOR OF URINE

*To the Editor*—Can the ingestion of a considerable quantity of cooked beets or of tomato juice cause a red or pinkish color to the urine? I have consulted the large textbooks of Simon and of Webster on clinical laboratory methods, also the works of Todd and Sanford, of Russell Haden and of Kolmer and Boerner without finding any definite statement regarding this seemingly insignificant point. A woman brought me a specimen of urine from her little boy that was definitely pinkish, apparently from eating cooked beets. No chemical or microscopic evidence of blood was present and no albumin, and the child was perfectly well. Any references to the literature will be appreciated. M D, Nevada.

**ANSWER.**—The color of normal urine is yellowish or amber, but the tints even in health may vary considerably. The reaction also has an influence on the color, and highly acid urine frequently becomes darker on standing, because of the oxidation of chromogens. The urochrome that gives the yellow color to the urine is at least in part derived from the pigment chlorophyll present in green plants and consumed as foods. Traces of urobilin, present chiefly in the form of the chromogen urobilinogen, hematoporphyrin and uroerythrin (which gives the deep reddish tinge of urine in acute fevers) are also present.

Many foods and drugs will alter the color of the urine. The urine may become reddish after the eating of beets, and an intense yellow after the ingestion of carrots, owing to the coloring matter of these plants. A dark yellow or reddish brown may be due to rhubarb, cascara, senna, santonin or considerable salicylic acid. Red may be produced by antipyrine, acetanilid, sulfonmethane or sulfonethylmethane. A brownish black may be caused by resorcin, tannin, phenol (carbolic acid), guaiacal, thymol, phenyl salicylate, hematin or melannin. A greenish black is produced by phenyl salicylate or pyrogallol, and a blue or greenish blue by methylene blue. Phenylazo-2,6-diaminopyridine monohydrochloride, fuchsin and aminopyrine may cause a red orange. Bile pigments color the urine reddish



brown, brown or greenish and give to it a greenish yellow foam. Among foods, beets, carrots, tomatoes, rhubarb, and pigments of logwood, madder, bilberries, and fuchsin are the most common causes of abnormal coloration of the urine.

An excellent discussion of the color of the urine under normal and pathologic conditions may be found in "Urinary Analysis and Diagnosis," by Heitzmann, New York, William Wood & Co., 1934.

#### AZOOSPERMIA

*To the Editor:*—A man, aged 28, complains of sterility. Seven years ago he contracted gonorrhea. The discharge cleared under local treatment within a few weeks. He is small, 4 feet 5 inches (135 cm.) in height and weighs 128 pounds (58 Kg.). The ears, nose and throat are not abnormal. There is no goiter. The lungs are clear throughout. The heart and abdomen are normal. The reflexes are normal. The prostate is small and contains a few hard nodules. The left seminal vesicle is hard, tortuous and cordlike. The testicles are small and atrophied. The urethra shows a large stricture, admitting a No. 22 French sound with difficulty. Blood Wassermann tests and the Hinton test give negative results. The urine is normal except for one or two pus cells per high power field. The patient's wife has been thoroughly examined and is physically normal. They have been married four years and there have not been any pregnancies. The patient has received a long course of dilations up to 30 French and prostatic massage. A condom specimen on two occasions after this treatment has failed to show any spermatozoa, the seminal fluid being scanty, thin, and full of pus cells and lipid debris. A diagnosis of chronic vesiculitis, chronic prostatitis and urethral stricture, accompanied by aspermia, seems to prognosticate permanent and absolute sterility. However, the patient requests treatment with glandular extracts in an attempt to produce spermatogenesis. Is there at present any available glandular product of pituitary or orchic origin that will bring about spermatogenesis in atrophic testicles? Moreover, is it likely that any such therapy would render this man fertile or men who have chronic vesiculitis and probably occluded vasa deferentia? Please omit name.

M.D., New Hampshire.

*ANSWER.*—The cause of the azoospermia (not aspermia as mentioned in the query) may be due to the atrophic condition of the testicle or to occluded vasa or both. No mention is made in the query whether the original gonorrhea was accompanied by epididymitis and also whether the epididymides at present feel thickened, nodular and occluded. It would also be of interest to know whether the testicles were normal in appearance previous to the attack of gonorrhea. The mode of procedure at present would be as follows: The patient should be given 0.3 Gm. (5 grain) tablets of the anterior lobe of pituitary extract, one tablet four times a day for a week. The amount should be increased to two tablets four times a day for another week and again three tablets four times a day for another week and finally four tablets four times a day; that is, sixteen tablets a day, or 5 Gm. (80 grains) of the extract, which should be kept up for at least six months. This has frequently brought back the spermatogenic function of the testicles. If at the end of six months the condom still shows azoospermia, the condition may be due to occluded vasa and the differential diagnosis can be made by aspiration of the testicle after the method of Huhner (Aspiration of the Testicles in the Diagnosis and Prognosis of Sterility, *J. Urol.* 19:31 [Jan.] 1928). If no spermatozoa are found, the condition may be considered almost hopeless and certainly treatments should be discontinued. If, however, spermatozoa, even though few and inactive, are found, the operation of epididymovasostomy may be recommended, the patient being informed that the operation is only at times successful and that without operation there is absolutely no hope and then leaving it to him to decide.

#### DELAYED PUBERTY IN GIRL

*To the Editor:*—A Negress has not as yet begun to menstruate and also has not the least sign of a mammary gland development. These glands look just like the male glands. She feels healthy and is normal in weight and height for her age. The pubic hair is typically distributed. There is no hair on the face and no thyroid gland enlargement. The basal metabolic rate has not been determined. The blood pressure and heart rate are normal. Could you suggest a treatment that might be of some value in the case? She is 17 years of age. Please omit name.

M.D., North Carolina.

*ANSWER.*—It would be helpful in answering this query if one could know whether the basal metabolic rate, blood count and urine are normal. Assuming that they are, the girl should be given one of the gonadotropic preparations derived from the urine of pregnancy or from the placenta. Any of these is apt to be effective. This treatment should be continued, if necessary, for several months. She should also be given small doses of thyroid, beginning with 0.016 Gm. three times a day and increasing by 0.016 Gm. every fifth day until the dosage is reached that produces a slight tachycardia, tremor or nervousness.

#### INCOMPATIBILITY IN PRESCRIPTION

*To the Editor:*—On June 10, 1935, the following prescription of mine was compounded:

Codeine .....	gr. ½
Amidopyrine .....	gr. 5
Acetylsalicylic acid .....	gr. 10
Put in capsule No. 12. One P. R. N.	

The patient has taken these pills without any ill effect, but on August 28 she took one and within two hours became extremely ill with epigastric pains, persistent vomiting, headache, weakness and dizziness. Investigation showed that the material in the capsules had melted and had become yellowish. Will you inform me as to whether or not there can be any chemical reaction between the substances in the prescription with the formation of toxic material? Please omit name. M.D., Connecticut.

*ANSWER.*—In the presence of moisture there does occur a chemical change by reaction of amidopyrine and acetylsalicylic acid, the first step in which seems to be the liberation of acetic acid and a liquefaction of the ingredients. This might be accounted for by a splitting of acetylsalicylic acid into its two component radicals under the influence of moisture. There is no doubt that further changes occur, as the material on standing becomes yellowish and ultimately even dark brown. The exact nature of this ultimate product still remains to be determined. One can understand however that, even in the first stages of decomposition of the acetylsalicylic acid, both the acetic acid and the salicylic acid would be capable of producing irritation such as was noted. It may be of interest that the addition of starch to the powder before encapsulation is capable of preventing this decomposition.

#### USE OF TYPHOID VACCINE IN ARTHRITIS

*To the Editor:*—Relative to the article on page 1161 in *THE JOURNAL* of Oct. 5, 1935, regarding the treatment of arthritis, the statement was made that very good results have been obtained in the past from typhoid vaccine. Would you kindly advise whether it was Wright's vaccine that was used, the dosage, and the interval between doses?

G. M. McCURE, M.D., Fisher, Ill.

*ANSWER.*—The vaccine originally employed was an ordinary typhoid vaccine prepared by Wright's method. There is no objection, however, to using the so-called "Triple Typhoid Vaccine," each cubic centimeter of which contains *B. typhosus*, 1 billion organisms; *B. paratyphosus A*, 750 million organisms; *B. paratyphosus B*, 750 million organisms. The vaccine is killed by heat and preserved with 0.5 per cent trisecol.

When typhoid vaccine is to be used therapeutically, it is more convenient to dilute it 1 to 10 with salt solution. The first dose for adults is usually 25 million (though some recommend 50 million) injected directly into the vein. The chill and fever appear from thirty to forty-five minutes after the injection. In order to obtain good reactions, it is necessary to increase the dose after each injection. In fact, some writers recommend doubling the dose after each injection.

The interval between injections should be from three to six days.

The maximum benefit is usually obtained by from five to six injections. The patient should then have a rest of several weeks before the treatment is repeated.

#### USE OF ARTIFICIAL LIGHT IN VISUAL TESTS

*To the Editor:*—Please tell me why you advise testing visual acuity under artificial light, especially of such low illumination intensity as 7 to 10 foot candles.

HILMAR G. MARTIN, M.D., Milwaukee.

*ANSWER.*—In order to standardize as far as possible any subjective test, all possible variables must be of such known quantity and character as to permit of reproduction when desired. In the measurement of visual acuity, one of the greatest variables is the quantity of illumination. If daylight is utilized, the intensity of illumination may vary from only a few foot candles to as high as many thousand, depending on the time of day, the locality, the clearness of the sky and the atmosphere and innumerable other factors, all of which are beyond control. Consequently it is far better to use artificial illumination of known intensity, which can be reproduced at any time of the day or night in any locality as desired. It is well known that visual acuity increases only slightly with an increase in intensity of illumination beyond 9 foot candles, when the reflection factor of the background is around 80 per cent, as is the case with the test cards used in measuring visual acuity; on the other hand, the increase from zero to 9 foot candles is accompanied by an enormous increase in visual acuity (Seeing, by Luckiesh and Moss, 1931). Consequently, nothing is to be gained by using more than 10 foot candles except complication of illuminating apparatus and increased expense.

### INSERTION OF SUTURES BEFORE LACERATION IN CHILDBIRTH

*To the Editor:*—Does medical literature describe the placing of perineal sutures during the early part of the second stage of labor, such sutures to be tied after delivery in the event of there having been a laceration or to be withdrawn if no laceration occurs? I have been following this practice for a number of years in my obstetric cases with success in obtaining normal and exact approximation of the soft parts when lacerated during delivery.

A. B. BOWER, M.D., Armada, Mich.

**ANSWER.**—About fifty years ago, E. Laphorn Smith of Canada wrote about a method of putting stitches in the perineum before the baby was born, which stitches afterward were tied, bringing the torn structures together. On this recommendation it was done at the Cook County Hospital by several generations of interns but was found inadequate, because the muscle tears deeply at the sides, from the periosteum of the pubic rami and behind the rectum at the raphe which joins the two pillars of the levator ani, anterior to the coccyx.

DeLee has placed stitches in the perineum before doing episiotomy at the Chicago Lying-in Hospital for many years, but few have imitated this example, nor is there reference to this procedure in the literature.

### DIATHERMY AFTER FRACTURES

*To the Editor:*—1. Of what value is diathermy following fractures, especially subcapital fractures of the femur? 2. Does such treatment predispose to fibrous union? 3. If fibrous union should be occurring would it aid or diminish the process of bone deposition? 4. What is the optimum, maximum and minimum dosage of administration of diathermy for hip fractures (if it is indicated)? 5. Does the use or nonuse of diathermy alter the outlook in event the patient sues because of non-union? Please omit name.

M.D., Kansas.

**ANSWER.**—1. Although increasing blood supply might increase bone union, this is controversial.

2. No.

3. It would be of doubtful aid.

4. We do not believe that it is indicated, but when used the dose varies with the type of apparatus, size of electrodes, and bulk of the tissue treated.

5. No.

### NO RELATIONSHIP BETWEEN AMEBIC DYSENTERY AND DIABETES

*To the Editor:*—I have been consulted by a patient, a war veteran who saw service in France during the World War and who there contracted amebic dysentery, for which he was treated together with amebic abscesses of the liver, which resulted as a complication of the dysentery. Sometime after his war service he was found to have diabetes mellitus of a moderately severe grade, which has persisted up to the present time. 1. Is the amebic dysentery with the liver abscesses a causative factor in producing the diabetes? 2. Is there a possibility of direct invasion of the pancreas with amebas, resulting in pancreatic disease and diabetes? Please omit name.

M.D., Ohio.

**ANSWER.**—1. There is no evidence whatever that amebic dysentery complicated with liver abscess is a causative factor in producing diabetes.

2. There is no authentic report of invasion of the pancreas by *Endamoeba histolytica*. Such invasion is extremely unlikely and can be demonstrated only by authoritative postmortem examination.

In the case noted there would seem to be no reason for suspecting an etiologic relationship between amebiasis and the diabetes. Diabetes in amebiasis is apparently no more frequent than in other groups.

### ANGINA PECTORIS IN LOCOMOTIVE ENGINEER

*To the Editor:*—What can I do as a safety measure in a case of angina pectoris in a locomotive engineer? In order to be within the law one must be careful, yet one should be able to protect the public also.

M.D., Washington.

**ANSWER.**—No patient who has angina pectoris should ever, under any circumstances, drive a locomotive or engage in any occupation where his sudden incapacity would endanger himself or others. This applies equally well to any other possible source of sudden incapacity. His occupation demands his constant attention every moment. Even a slight attack of pain might divert his attention at a critical moment. A more serious hazard lies in the possibility of a coronary thrombosis while at work. Any person who has angina pectoris is much more liable to have a coronary thrombosis than one without such symptoms and in all probability will eventually die of such an attack. He should report his condition to the examining physician of the railroad at once.

## Medical Examinations and Licensure

### COMING EXAMINATIONS

#### STATE AND TERRITORIAL BOARDS

- ALASKA:** Juneau, Sept. 1. Sec., Dr. W. W. Council, Juneau.
- ALABAMA:** Montgomery, June 23-25. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.
- ARIZONA:** *Basic Science.* Tucson, June 16. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson. *Medical.* Phoenix, July 7-8. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.
- CALIFORNIA:** San Francisco, July 6-9, and Los Angeles, July 20-23. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.
- COLORADO:** Denver, July 7. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.
- CONNECTICUT:** *Medical (Regular).* Hartford, July 14-15. *Endorsement.* Hartford, July 28. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Medical (Homopathic).* Derby, July 14. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.
- DELAWARE:** July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.
- DISTRICT OF COLUMBIA:** Washington, July 13-14. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.
- FLORIDA:** Jacksonville, June 15-16. Sec., Dr. William M. Rowlett, P. O. Box 786, Tampa.
- HAWAII:** Honolulu, July 13-16. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.
- IDAHO:** Boise, Oct. 6. Commissioner of Law Enforcement, Hon. Emmitt Post, 205 State House, Boise.
- ILLINOIS:** Chicago, June 23-26. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.
- INDIANA:** Indianapolis, June 23-25. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5 State House Annex, Indianapolis.
- IOWA:** *Basic Science.* Des Moines, July 14. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.
- KANSAS:** Topeka, June 16-17. Sec., Board of Medical Registration and Examination, Dr. C. H. Ewing, 609 Broadway, Larned.
- MAINE:** Augusta, July 7-8. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.
- MARYLAND:** *Medical (Regular).* Baltimore, June 16. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Medical (Homopathic).* Baltimore, June 9-10. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.
- MASSACHUSETTS:** Boston, July 14-16. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.
- MINNESOTA:** Minneapolis, June 16-18. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.
- MISSISSIPPI:** Jackson, June 22-23. Sec., State Board of Health, Dr. Felix J. Underwood, Jackson.
- MONTANA:** Helena, Oct. 6. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.
- NEW HAMPSHIRE:** Concord, Sept. 10-11. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.
- NEW JERSEY:** Trenton, June 16-17. Sec., Dr. Arthur W. Belting, 28 W. State St., Trenton.
- NEW MEXICO:** Santa Fe, Oct. 12-13. Sec., Dr. Le Grand Ward, Santa Fe.
- NEW YORK:** Albany, Buffalo, New York, and Syracuse, June 23-25. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 313 Education Bldg., Albany.
- NORTH CAROLINA:** Raleigh, June 15. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.
- NORTH DAKOTA:** Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.
- OHIO:** Columbus, June 16-19. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.
- OREGON:** *Medical.* Portland, June 16-18. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland. *Basic Science.* Corvallis, July 18. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.
- PENNSYLVANIA:** Philadelphia and Pittsburgh, July 7-11. Sec., Board of Medical Education and Licensure, Mr. Clarence E. Ackley, 400 Education Bldg., Harrisburg.
- PUERTO RICO:** San Juan, Sept. 1. Sec., Dr. O. Costa Mandry, Box 536, San Juan.
- RHODE ISLAND:** Providence, July 2-3. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.
- SOUTH CAROLINA:** Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.
- SOUTH DAKOTA:** Rapid City, July 21-22. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.
- TEXAS:** Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.
- UTAH:** Salt Lake City, July 10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.
- VERMONT:** Burlington, June 24. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.
- VIRGINIA:** Richmond, June 18-20. Sec., Dr. J. W. Preston, 28½ Franklin Rd., Roanoke.
- WASHINGTON:** *Basic Science.* Seattle, July 9-10. *Medical.* Seattle, July 13-15. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.
- WEST VIRGINIA:** Bluefield, July 13. State Health Commissioner, Dr. Arthur E. McClue, Charleston.
- WISCONSIN:** Milwaukee, June 30-July 3. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

#### NATIONAL BOARD OF MEDICAL EXAMINERS

**NATIONAL BOARD OF MEDICAL EXAMINERS.** *Parts I and II.* June 22-24 and Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

#### SPECIAL BOARDS

**AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY:** Written examination and review of case histories of Group B candidates will be held in various cities in the United States and Canada, Nov. 7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. All applications and case reports must be filed sixty days before date of examination. Address, 122 So. Michigan Ave., Chicago.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Cleveland, Jan. 9. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: New York, Sept. 25-26. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 29-30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Cleveland, Sept. 25-27. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

### California Reciprocity and Endorsement Report

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports 17 physicians licensed by reciprocity and 5 physicians licensed by endorsement from Jan. 2 through Jan. 30, 1936. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists.....	(1934)		Maryland
University of Colorado School of Medicine.....	(1933)		Colorado
Northwestern University Medical School.....	(1932), (1934)		Illinois
University of Illinois College of Medicine.....	(1934)		Illinois
University Medical College of Kansas City, Missouri.....	(1904)		Oregon
University of Nebraska College of Medicine.....	(1921)		N. Dakota.
(1905), (1926), (1934) Nebraska			
Columbia Univ. College of Physicians and Surgeons.....	(1926)		New York
New York University, University and Bellevue Hospital Medical College.....	(1906) Washington, (1924)		New York
University of Oklahoma School of Medicine.....	(1930)		Oklahoma
Meharry Medical College.....	(1933)		New York
University of Manitoba Faculty of Medicine.....	(1924)		N. Dakota
Queen's University Faculty of Medicine.....	(1924)		Michigan

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Leland Stanford Junior University School of Medicine.....	(1917)		U. S. Navy
University of Illinois College of Medicine.....	(1930)		U. S. Navy
Albany Medical College.....	(1929)		N. B. M. Ex.
Columbia Univ. Col. of Physicians and Surgeons.....	(1924)		N. B. M. Ex.
University of Oregon Medical School.....	(1931)		N. B. M. Ex.

### Wisconsin January Examination

Dr. Robert E. Flynn, secretary, Wisconsin State Board of Medical Examiners, reports the oral, written and practical examination held in Madison, Jan. 14-16, 1936. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifteen candidates were examined, all of whom passed. Twenty-four physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
College of Medical ..			1
Loyola University Sc ..			1
Northwestern Univs ..			2
Rush Medical College ..			2
Univ. of Minnesota 1 ..			3
University of Wisconsin Medical School.....	(1934, 4), (1935)		5
Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau ..	(1920)†		1

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Yale University School of Medicine.....	(1930)		Connecticut
Loyola University School of Medicine.....	(1931)		Illinois
Northwestern Univ. Medical School.....	(1930) Illinois, (1932)		Minnesota
Rush Medical College.....	(1928), (1934)		Illinois
University of Illinois College of Medicine.....	(1932), (1933)		Illinois
State University of Iowa College of Medicine (1922),	(1927)		Iowa
University of Kansas School of ..			Kansas
University of Michigan Medical ..			Michigan
University of Minnesota Medical ..			
(1935), (1935) Minnesota			
Washington University School of Medicine.....	(1929), (1930)		Missouri
University of Pennsylvania School of Medicine.....	(1929)		Mass.
Marquette Univ. School of Med.....	(1933) California, (1934)		Michigan
University of Wisconsin Medical School.....	(1931), (1931)		New York

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School.....	(1916)		U. S. Navy

\* License has not been issued.

† Verification of graduation in process.

### Nevada Reciprocity Report

Dr. Edward E. Hamer, secretary, Nevada State Board of Medical Examiners, reports 2 physicians licensed by reciprocity after an oral examination held in Carson City, Feb. 3, 1936. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University School of Medicine.....	(1935)		California
Milwaukee Medical College.....	(1906)		Wisconsin

## Book Notices

**The Diagnosis and Treatment of Pulmonary Tuberculosis: A Handbook for Practitioners; A Text-Book for Students, Nurses and Social Workers.** By John B. Hawes, Jr., M.D., President of the Boston Tuberculosis Association, and Moses J. Stone, M.D., Assistant Professor, Diseases of the Chest, Boston University, School of Medicine. With a foreword by Richard C. Cabot, M.D. Cloth. Price, \$2.75. Pp. 215, with 44 illustrations. Philadelphia: Lea & Febiger, 1936.

Hawes and Stone have presented a brief historical sketch of tuberculosis in the human family, beginning with references on the Babylonian tablets and ending with the recent developments, such as chest surgery. Brief but adequate chapters on history taking and symptoms are included. In the discussion of the physical examination the minor and insignificant signs, which are often given much space, have been entirely omitted. This is greatly to the advantage of the reader, who will find only the important phases of the physical examination included. It is particularly significant that the authors included a chapter on the differential diagnosis of tuberculosis and other common diseases of the lungs and bronchi. In the chapter on pulmonary tuberculosis in childhood, attention is called to the fact that a positive tuberculin test is necessary for the diagnosis of the childhood type of tuberculosis. The tuberculin test, together with history of exposure and roentgen examination, is carefully considered. As regards treatment, many tuberculosis workers in this country will disagree with statements concerning the value of the preventorium for children with the childhood type of tuberculosis. The roentgen examination is stressed, but its substitution for the clinical examination of the patient is definitely condemned. The fact is emphasized that in the early development of pulmonary tuberculosis the x-rays may fail but that in most cases they give valuable information before one is able to elicit clinical signs and before symptoms are present. It is clear from the descriptions of shadows of tuberculosis and other diseases that one cannot determine the etiology of a pulmonary lesion with accuracy on a single roentgen examination. Emphasis is placed on the importance of repeated sputum examinations when tuberculosis is suspected and tubercle bacilli are not found in the first few examinations. Adequate space and conservative conclusions are drawn regarding the value of the blood sedimentation test and the leukocyte picture. In the chapter on treatment of pulmonary tuberculosis, attention is called to the work of Pratt and Minor, who like many others have accomplished excellent results by treating patients in the home; yet in homes where adequate facilities are not available such treatment should not be attempted. The recognized value of artificial pneumothorax in the treatment of pulmonary tuberculosis is pointed out. Other forms of collapse therapy, such as interruption of the phrenic nerve, intrapleural and extrapleural pneumolysis, and extrapleural thoracoplasty, are considered. In the chapter on heliotherapy, the authors have not expressed undue enthusiasm but look on this form of treatment as only one agent in an attempt to control tuberculous lesions. In no uncertain terms, Hawes and Stone advise against the use of BCG "until many disputed points in regard to it are cleared up and until we have far more definite knowledge as to its possible value and dangers than is at present available." This volume, although small, contains a great deal of valuable information and therefore deserves a place in the library of every physician.

**Modification of the Virulence of Tubercle Bacilli.** By N. Plum. Särtryck ur Skandinavisk veterinärtidskrift för bakteriologi, patologi samt kött- och mjölkhygien. Paper. Pp. 397-472. Uppsala: Almqvist & Wiksells Boktryckeri-A.-B., 1935.

This monograph (an English translation) details the work carried out in the State Veterinary Serum Laboratory during 1925 to 1930 and contains an extensive review of the literature, with a bibliography of 129 references. The survey forms a continuation of a previous monograph by the author on avian tuberculosis in mammals, in 1925-1926. Twelve charts on experimental data are included. The work has been painstaking in detail and the author admits many possibilities for error in results and interpretation. The problem was to make avian tubercle bacilli virulent for mammals and to make mammalian tubercle bacilli virulent for fowls. The cultural properties of

tubercle bacilli are reviewed and cases recorded in which mammalian tubercle bacilli were demonstrated in birds and avian tubercle bacilli in mammals. Mixtures of bovine and avian tubercle bacilli are inoculated through several generations of guinea-pigs, rabbits and hens, and it was found possible to separate the avian and bovine bacilli in the original mixture by this means, as fowls appear to be able to eliminate bovine bacilli from the mixtures while guinea-pigs eliminate the avian bacilli. These observations show that caution is necessary in judging the results, since the resistance of these experimental animals to the various tubercle bacilli is not absolute. Mammalian tubercle bacilli may live in fowls for a considerable length of time without giving rise to microscopic tuberculous changes, and avian bacilli may show some virulence for guinea-pigs, although this virulence will fail to appear in the next generation of pigs. The inoculation of material from tuberculous organs of fowls into guinea-pigs and rabbits showed that it was not practicable in this way to produce modification of the virulence of the bacilli employed. The inoculation of tuberculous organs of fowls into calves, rabbits, guinea-pigs and fowls showed a modified virulence in two of six series of experiments. The inoculation of tuberculous organs of cattle into guinea-pigs, rabbits and fowls showed a modification of the virulence in four of eleven series of experiments. A bovine culture injected intravenously into fowls and the organs injected into guinea-pigs, rabbits and hens in one experiment showed a modification of virulence of the bacilli. This monograph merits reading by all interested in tuberculosis and particularly by students engrossed in the experimental phases. It points out the difficulties encountered in solving so simple a problem as virulence of tubercle bacilli in the intricate disease tuberculosis. The author's concluding contention that it is actually possible with the technic given to modify the character of virulence in tubercle bacilli will be questioned by those conversant with experimental methods in tuberculosis, yet he is to be given credit for writing an excellent monograph on a difficult subject that still challenges undisputed proof. No doubt this problem will eventually succumb to the exacting weapons of the fundamental investigator now reenforced by the ever enlarging scope of new methods and stimulated by this monograph.

**Autistic Gestures: An Experimental Study in Symbolic Movement.** By Maurice H. Krout. Psychological Monographs. Edited by Joseph Peterson. Vol. XLVI, No. 4, Whole No. 208. Published for The American Psychological Association. Paper. Price, \$1.75. Pp. 126, with 10 illustrations. Princeton, N. J., and Albany, N. Y.: Psychological Review Company, 1935.

The present volume is an interesting monograph. The purpose is to determine whether spontaneous gesticulations or movements are significant as far as aiding in understanding the nature of mental mechanism is concerned. The author particularly wishes to find out whether autistic gestures or unconscious movements are sufficiently concrete so that they can be observed in a scientific manner, to find out whether the stimuli of these gestures can be determined through day-dream or reading responses, and whether there is any consistency of gesture in similar stimulus situations. The number of gestures was observed, classified and tabulated. The reliability of the observers in obtaining this material was also checked and correlated. The author concludes that autistic gestures cannot be interpreted even by individuals who conscientiously attempt to interpret them but require an "abstracted state" and special technics for their study; that the gestures are determinable through the stimuli with which they are associated in time and that there seems to be a reproduction of specific autistic gestures to a stimulus. These gestures probably originate in conflict situations of which they become symbolic, and they may be an escape mechanism in the presence of conflict and blockage. The author feels that further study of gestures will reveal information valuable for personality study. His conclusions seem fairly well justified from the material given. A study of this sort is highly specialized, lying between an experimental psychological point of view and the psychoanalytic. While one can criticize in some detail various weaknesses and see a tendency toward finding desired results where only speculation exists, in this monograph is

pointed out a means of personality study that might prove useful in the future. There is appended a list of 340 gestures that were observed. The material has little value except to the most advanced students of psychopathology.

**Atlas der klinischen Elektrokardiographie mit Anleitungen zur Differentialdiagnose.** Von Dr. Wilhelm Dressler, Assistent der "Herzstation" in Wien. Second edition. Paper. Price, 15 marks. Pp. 116, with 161 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1936.

The author has made a great improvement in this edition over the first. He has included a number of electrocardiograms, many of them with four leads, illustrating the changes seen in coronary occlusion and myocardial infarction. Thirty new illustrations have been added in the present edition to the 134 in the preceding one and a number of the old curves have been replaced by better ones. The illustrations are nicely reproduced, and the descriptions have been revised in many instances. As before, the electrocardiograms are placed on one page and the descriptions of the curves, the electrocardiographic diagnosis, and the pertinent clinical observations are printed on the opposite page. This permits the reader to arrive at his own interpretations independently if he desires this practice. This book is intended more for the cardiologist versed in the field of electrocardiography than for the beginner in this field. Many rare and involved arrhythmias are presented, which would be more confusing than beneficial to the general practitioner, the medical student or even the majority of internists. They are, however, well suited for the cardiologist wishing to become more expert in his electrocardiographic diagnosis. Naturally, there are a number of interpretations of records with which many authorities would disagree, the most obvious being figure 21. Furthermore, it is difficult to understand how an author so cognizant of the recent advances in electrocardiography can still persist in calling bundle branch block of the common type right bundle branch block. But these are minor criticisms and do not detract from the merits of the book. It is highly recommended for the cardiologist desiring advanced electrocardiography.

**Thirty-Third Annual Report, 1934-1935, of the Imperial Cancer Research Fund.** Under the Direction of the Royal College of Physicians of London and the Royal College of Surgeons of England. Paper. Pp. 35. London, 1935.

Dr. J. A. Murray, who has been director of the Imperial Cancer Research Fund since 1915, retired Oct. 1, 1935, and Dr. William Ewart Gye, formerly on the staff of the Imperial Cancer Research Fund (1913-1919), who has been working under the Medical Research Council for the past sixteen years, was appointed director. The report of the director cites the pessimism and confusion that prevailed in the medical profession in 1902 on the subject of cancer. Cancer in animals was practically unknown. The morbid anatomists regarded cancer as a cellular disease and, of the many hypotheses to explain its origin, only the Cohnheim theory of embryonic rests has survived as an explanation of certain rare malignant tumors. Hanau's first successful transplantation of a rat tumor to another rat and Morau's repetition of this experiment made little impression. Jensen's experiments made a more profound impression, as the Imperial Cancer Research Fund was just established and was just beginning to demonstrate that cancer was one of the few diseases common to man and all vertebrate animals. Bashford's studies of 10,000 cases critically analyzed revealed that in the accessible sites only 9 per cent had not been recognized clinically, while 7 per cent had been erroneously diagnosed as cancer. In the inaccessible sites the percentage of missed diagnoses was as high as 38, while only 9 per cent of cases had been erroneously diagnosed as cancer. Since cancer in inaccessible sites constitutes a large fraction of the total deaths, the recorded total cancer mortality must be considerably lower than the actual one. Improvements in methods of diagnosis and clinical recognition of cancer would tend to diminish the extent of missed diagnoses and increase the recorded mortality. If this argument is correct the increase in cancer mortality should fall mainly in the inaccessible group and less marked in the accessible. Investigation proved that the alleged increase fell mainly in the inaccessible group, more especially the stomach, while the skin and uterus showed no increase; in fact, the incidence of cancer of the uterus showed a decrease. The alarming statement that

cancer was appearing more frequently in the young was also disproved. These inquiries proved that cancer is not increasing at an alarming rate in civilized communities and that cancer is found when looked for among savage uncivilized people. Two aspects of the problem must be sharply distinguished: first, that which deals with the conversion of a normal cell into a malignant cell; second, that which deals with the properties of the malignant cell itself. Attention is again called to the existence of a group of filtering tumors caused by intracellular agents. The criticism that these are not true neoplasms seems to be wholly untenable. The belief is expressed that the knowledge of the disease gained in the last thirty years is more extensive than that of most other chronic diseases and has profoundly influenced its diagnosis and treatment.

**Principles of Hygiene. Part I: Principles of Constructive Hygiene. Part II: Principles of Defensive Hygiene.** By Thomas A. Storey, Ph.D., M.D., Director, School of Physical Education and Hygiene, Stanford University. Revised edition. Cloth. Price, \$3.50. Pp. 524, with 66 illustrations. Stanford University, California: Stanford University Press, 1935.

This revised edition of Dr. Storey's book is all that a textbook of hygiene for advanced students should be. It is not suitable for beginners but for the advanced student who needs to learn more of hygiene than just the principles useful in everyday living; it is a fine textbook, comprehensive without being heavy, scientific without being abstruse. It is well calculated to give the prospective sanitarian or public health official, or the teacher of health and hygiene, a practical working knowledge based on a sound comprehension of underlying principles. The first half of the book is devoted to principles of constructive hygiene; that is, a discussion of heredity, cellular physiology, nutrition, the structure and function of the body and its relation to the environment. In the second part the author discusses defensive hygiene; that is, the hereditary dangers, nutritional deficiencies, the abnormalities of growth and development and the unfavorable factors in the environment. A second volume, in preparation, is planned to take up the practice of hygiene based on the principles set forth in this book. For the undergraduate medical student or the student working toward a postgraduate degree in health and hygiene, or for the reference library of any college or university where hygiene is taught, this book can be recommended with confidence. It is well illustrated, clearly printed and adequately indexed. In this day of awakening interest in hygiene and public health on the part of his patients, the practicing physician might find it a useful addition to his library, not so much to impart knowledge as to correlate that which he possesses from the point of view of individual and group hygiene.

**A Textbook of Surgery.** Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School, Chicago. By American Authors. Cloth. Price, \$10. Pp. 1,608, with 1,349 illustrations. Philadelphia & London: W. B. Saunders Company, 1936.

This new surgical textbook is a large single volume and is the result of contributions from no less than 184 authors. The author selected in each instance is an authority in his field, a teacher, a master surgeon, a well known clinician or a research worker. The chapters, while brief and of necessity condensed, are informative and authoritative. The text differs from that of the older works in that it is not dogmatic. It is not calculated to create the impression in the student's mind that the information proffered is final; it reads rather like a report on a study in progress. This characteristic, coupled with short historical references and an appended bibliography, lifts it from the level of the all too dogmatic textbooks and places it in a close rapprochement with the current scientific medical literature. The student will receive from it the impression that no knowledge is final but that everything is subject to further investigation. The book reflects the best thought in American surgery. The uniformity in the care of presentation of subject matter, the excellence of its English and the appreciation of pedagogic requirements make this volume a valuable addition to our teaching armamentarium. All the chapters are adequately treated, but especially noteworthy are those on the relationship of bacteriology to surgery by Meleney, diseases of the thyroid gland and their management by Pemberton and

Haines, arthritis by Wagoner, the treatment of the autonomic nervous system by White, and the concise and exhaustive chapter on diseases of the liver and biliary system by Judd, Crisp and Waldron. While the book is written primarily for the student, the practicing surgeon will find it most useful for rapid orientation in any given field.

**Über die formale Genese des Lungenkrebses.** Von Kaj Lindberg. Arbeiten aus dem Pathologischen Institut der Universität Helsingfors (Finland), Neue Folge, Band IX. Heft 1-3. Gegründet von v. Prof. Dr. E. A. Hönén. Herausgegeben von Prof. Dr. Axel Wallgren. Paper. Pp. 400, with 560 illustrations. Jena: Gustav Fischer, 1935.

This monograph is based on a systematic study of the bronchial tree in primary carcinoma of the lung. In a number of cases a tendency to the development of many carcinomatous formations in the bronchial lining was established. A definite change in the bronchial epithelium in one or several places outside the main growth was demonstrated in more than a third of the cases studied. Such changes were found in the flat cell variety of carcinoma; it was not found in adenocarcinoma. The author emphasizes that he found only minute multiple carcinomas in addition to the large carcinoma and no other macroscopically recognizable primary growths with only one exception, in which case each lung was the seat of a primary carcinoma about as large as a fist. It seems as if the possibility must be considered that at least many of the small carcinomas developed long before death but that for some reason they grew slowly, perhaps on account of restraining influences originating from the large carcinoma. But there is also the possibility that the minute carcinomas, in some cases at least, developed shortly before death when the resistance of the body perhaps was broken down. Other phases of carcinoma of the lung, as, for instance, "precancerous" changes, spontaneous tumors of lungs in animals, efforts to produce tumors of the lungs experimentally, and earlier observations on changes in the bronchial epithelium in pulmonary carcinoma, are discussed also. The reports of the cases studied, with profuse illustrations, occupy no less than some 260 pages. There is a good bibliography. The monograph will be of great interest to all students of carcinoma of the lung.

**Introduction to Human Parasitology.** By Asa C. Chandler, M.S., Ph.D., Professor of Biology, Rice Institute, Houston, Texas. Fifth edition. Cloth. Price, \$5. Pp. 661, with 308 illustrations. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Limited, 1936.

Several features recommend the new edition of Chandler's Human Parasitology: it is as readable as former editions, especially for the nonparasitologist; it brings the subject to date, including in its pages progress in numerous fields during the last six years; it is useful as a ready reference for the physician in supplementing his knowledge concerning the numerous diseases ordinarily confined to the tropics but which appear with alarming frequency in temperate zones. The book is divided in three parts: protozoa, helminthology and arthropods. In the first part items of interest to the physician are syphilis and other spirochetal diseases, amebiasis and malaria; the second part is devoted to the worms, including especially tapeworms, hookworms and their allies, and trichinae; the last part presents methods by which mosquitoes, flies, fleas, ticks and the other arthropods may be recognized, and means for their destruction. The last chapter is devoted to fly maggots and myiasis, with several pages on the subject of myiasis of wounds. There are numerous illustrations scattered throughout the text, while at the end is a list of books and periodicals for the assistance of persons who desire to pursue the subject further.

**Doctor of the North Country.** By Earl Vinton McComb, M.D. With a preface by Logan Clendenning, M.D. Cloth. Price, \$2. Pp. 238. New York: Thomas Y. Crowell Company, 1936.

This is a sincere, unvarnished tale of the experiences of a doctor who has grown up with the lumbering country of the upper Michigan peninsula, has seen the lumber go and new times come, and all the way through has cared for and lived with his people. Brought up in the family of a physician, he early learned to admire and respect his father and, through him, the calling which he represented. The book has its laughs and its tears, and often they are close together, just as they are

in life. It has its grim aspects too, and in places the author indulges in mysticism, at which point he comes nearest to spoiling his book. However, as the introduction by Logan Clendening points out, doctor talk is the best talk there is, and this is good doctor talk. If a patient or two could pick it up from the waiting room table and read it while waiting for the doctor, it might help to dispel the state of the public mind to which Robert Morris referred when he characterized gratitude as one of the first symptoms of disease to disappear as convalescence sets in.

**Studies in the Psychology of Sex.** By Havelock Ellis. In Four Volumes. Cloth. Price, \$15, per set. Pp. 3,000. New York: Random House, 1936.

For many years these studies of the psychology of sex have been available only to physicians, sociologists and the legal profession. There is likely still to be some difference of opinion as to whether or not the time is ripe for the release of this material to general readers. However, the new publisher has purchased the plates of the original edition, has combined the original seven volumes into four handsome books in a nice wooden box, and makes the collection available at an exceedingly low price. The books have been enthusiastically greeted by reviewers in all the leading literary publications of the country. Certainly it is well to have these contributions of a great pioneer in this acceptable form. The volumes include such topics as sexual inversion, eonism, homosexuality, marriage and many similar subjects.

**Prognose und Therapie der Geisteskrankheiten.** Von Privatdozent Dr. Max Müller. Paper. Price, 7.20 marks. Pp. 164. Leipzig: Georg Thieme, 1936.

Müller summarizes the various types of therapy in the psychoses and puts into this little volume a tremendous amount of information. Interestingly, he compares the analytic method of treatment with other methods, calling the former an "uncovering" technic and the latter a "covering" technic, which is an excellent contrast. As a summary of the various methods of treatment, the work is well recommended.

**Essentials of Psychopathology.** By George W. Henry, Associate Professor of Psychiatry, Cornell University Medical School, New York. Cloth. Price, \$4. Pp. 312. Baltimore: William Wood & Company, 1935.

The author has written an elementary book concerned with general psychic mechanisms and their deviations from normal. He has done fairly adequately in his attempt to be fair to most of the important schools in psychiatry. There is a small amount of illustrated case material. Three hundred pages is hardly sufficient for an adequate summary of the field of psychopathology, so that this work serves simply as an appetizer to the beginning student in the field. It is recommended highly for this purpose.

**Neurose; Lebensnot; ärztliche Pflicht: Klinische Vorlesungen über Psychotherapie für Ärzte und Studierende.** Von Professor J. H. Schultz. Boards. Price, 4 marks. Pp. 125. Leipzig: Georg Thieme, 1936.

Under this queer title the author presents an elementary consideration of the neuroses as a result of certain needs within the patient and thus agrees with etiologic psychiatry. The work is intended more for general practitioners or the public and corresponds in content to the numerous works of a similar character published in England. It has no particular value to the specialist or to the general practitioner.

**Neurology and Psychiatry for Nurses.** By Frederick P. Moersch, B.S., M.D., Associate Professor of Neurology, The Mayo Foundation, Rochester, Minnesota. Boards. Price, \$1.85. Pp. 104, with 9 illustrations. Minneapolis, Minn.: Burgess Publishing Company, 1935.

The author has written a compact manual for nurses in which the essential data concerning nervous and mental diseases are included. There is an adequate reading list that indicates what supplementary work should be consulted. The material is given in a concise form, in fact is a brief outline, and as such may not be well suited for nurses. Its purpose as a means of review for examination could be stated as accomplished. This is not the best of the modern works that are available for nurses.

## Miscellany

### COUNTY MEDICAL SOCIETY LEADERSHIP IN PUBLIC HEALTH EDUCATION

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AND

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The public today is health conscious as never before. Unfortunately much of the medical "information" disseminated to assuage public interest is grotesquely garbled and absurdly distorted. This is obvious to any one who tries to escape the bombastic bombardment of the radio, the billboard and the advertising sections of popular magazines, in which a molecule of medical fact becomes a mountain of unscientific balderdash authenticated (!) by innumerable "leading hospitals" and equally innumerable "physicians of prominence" possessing one attribute in common, anonymity.

That public ignorance and credulity should exist to a degree rendering such propaganda possible and profitable is not only regrettable but even, perhaps, astonishing. Doctors have long lamented the fact that otherwise intelligent people in quest of health sometimes, if not indeed, often, follow flickering fads over devious detours before returning, bruised and broken, to the straight and narrow path of reason.

But the same doctors have not always either admitted or lamented the fact that, to no small extent, the fault in this matter lies with physicians rather than with the laymen. Laymen possess a natural and lively thirst for medical knowledge. But physicians, wrapped in a mystic mantle of medieval reserve, have remained taciturn, have refused, except in a minor and often ineffective degree, to use the lay press and the radio, and to that extent have renounced leadership in public health education.

Physicians may well be annoyed at the preposterous misinformation that floods the air and crowds the printed page, and particularly at the subtle and often not so subtle intimation that it is all endorsed by the medical profession. But physicians who skip the page or turn the dial in bored disgust often fail to realize or admit that it is their own indifference or neglect which both cause and perpetuate this evil.

In the face of this indifference, within the past few decades numerous organizations have sprung up with the laudable and lofty purpose of educating the public in medical matters. With the aims of many of these, physicians have been in complete accord and have cooperated as fully, perhaps, as the insistent demands of private practice permit, for medicine is a jealous mistress. But nevertheless it is certain that the medical profession in general has not assumed the full leadership in the education of the public which is properly its place and its function.

To this end the Atlantic County Medical Society has recently departed somewhat from tradition in an endeavor to assume such leadership in its own community, and our purpose in this brief article is to describe what a small but well organized county society can do and is doing to tell its own public what they should know about medicine.

The origin of this action was largely accidental. On Sept. 24, 1935, a nurse was asked to plan a "town health meeting" for Atlantic City and received a publicity kit and guide from Mr. Prantz of the National Health Council. She was offered the services of Mr. Dennis J. Sullivan of the New Jersey State Department of Health. The meeting was to be a part of a nation-wide campaign of education on community health problems and was to be synchronized with hundreds of similar meetings, with nation-wide publicity and coast-to-coast radio programs. In spite of all the proffered lay help, the nurse



did not arrange a town health meeting. But, long after the nation-wide campaign, a minister came upon the unused plans and discussed them with a member of the chamber of commerce. By purest accident they fell into the hands of a physician, who brought them to the attention of the county medical society. The society eagerly seized on the idea and planned and consummated its highly successful town health meeting.

It is not our intent to criticize the National Health Council for failure to solicit the help of the county medical society in planning a campaign concerned with health; for, while this might seem a more proper method than to rely solely on lay individuals and lay organizations, it may well be that experience has taught the National Medical Council the difficulty of expecting effective leadership or even active participation in such matters from local medical societies.

This may seem, perhaps, an unwarranted and severe assumption. But the fact remains that there has been more than a modicum of medical indifference and neglect and, even when this has not been the case, the inability of physicians to express themselves and their views in a manner interesting to the public at large has more than once been commented on by those concerned with the dissemination of such material.

In any event, the town health meeting was held under the auspices of the Atlantic County Medical Society with short and pointed addresses by chosen members of the society on such subjects as Patent Medicines and Quackery, Periodic Health Examinations, Health Agencies, Socialized versus Organized Medicine, and other kindred, timely subjects.

Particular effort was devoted to making the addresses and the meeting interesting and concise, the speakers being enjoined to make their remarks pointed, striking and brief. To ensure this all addresses were edited by a committee chosen for the purpose and the time limit for each speaker was strictly enforced.

The town health meeting proved to be a decided success and produced a stirring revival of community interest in health matters, so much so that the society was prepared to rest on its oars, as it were, satisfied that something had been accomplished. But, fortunately, it was prevented from lapsing into self-satisfied lethargy by a comment from a newspaper editor. The press had been exceedingly generous with space given to the town meeting and very gracious in its favorable comments. But, in discussing the meeting afterward the editor commented: "This is all very well. It was a good idea and a good meeting. But the trouble with you medical men is that you start something, but you do not finish it! What comes next?"

What comes next? What should come next? The society suddenly realized that public interest, after all, is apt to be fitful and transient; that, like a human soul, it has a way of backsliding. It is not a single advertisement but its repetition and reiteration that bring returns. If the profession is to advertise public health and its importance, as it well may and should do, its efforts must not be spasmodic but, on the contrary, consistent and persistent if there are to be any lasting results.

So the Atlantic County Medical Society was confronted with the problem of how to maintain the public interest its town health meeting had aroused. It realized that numerous "health articles" are written by men of exceptional skill with years of experience and syndicated in nearly every newspaper in the country. But their articles lack specific community appeal. Moreover, the finances of a county medical society with only 114 members does not permit the employment of a physician not in practice with the requisite ability to act as a full time publicity agent. The society as a whole, therefore, undertook to sponsor, produce and carry on a series of articles on public matters to be printed once a week in the magazine section of the Atlantic City *Sunday Press* under the caption "Sponsored by the Atlantic County Medical Society."

Two difficulties at once presented themselves: What should be the character of the articles and how could it be ensured that they would have "news interest" and popular appeal?

The committee of four appointed to direct the project drew up, first of all, a tentative list of titles and, after first selecting individuals thought to be best fitted to discuss certain subjects, appealed for volunteers from the society at large to be given assignments from the remaining titles. The appeal was eminently successful.

The selection of subjects for the articles was in large degree governed by several factors:

(a) As a community project, it was thought desirable to lay some emphasis on its community aspects; for, without doubt, in any community there are many uninformed as to the degree and character of the facilities and agencies existing in the community in relation to public health. Various articles in the series were concerned, therefore, with the nature and character of the public health facilities of Atlantic City: its hospitals, convalescent homes and sanatoriums, its climatic and other aids in keeping well, and the opportunities for sane and healthful amusement and relaxation available to its residents: for who will deny that it is as important to keep well as to get well? Indeed, is not this the crux of preventive medicine?

(b) Admitting the often commented on inability of physicians to speak or write entertainingly of such matters, resulting, perhaps, from lack of practice, the committee reserved the right to reject, amend, edit and return to the author for rewriting when necessary all the papers submitted. Final acceptance or rejection as well as the order of publication was delegated to the editor of the *Press*.

(c) Recalling the old proverb that "few souls are saved after the first twenty minutes," an absolute maximum of 1,200 words was established and adhered to. In the endeavor to attract the attention of readers, particular care was given to the title. Thus "Care of the Aged" became "Life Can Begin at Sixty," "Pneumonia" became "The Captain of the Men of Death," and "The Healthy Child" was transformed into "Children of the Sun."

As an aid in arousing and maintaining community interest, and incidentally as an inducement to volunteers, each article appears over the signature of the author. By thus being neither anonymous nor by authors perhaps unknown to the majority of the community, they have a more personal community interest and possibly may thus be more generally read. But, in order to avoid any suggestion of personal advertising, as it were, certain precautions were made mandatory:

First, regardless of whatever titles the author may possess, such as, for example, F.A.C.S., F.A.C.P. or F.A.S.C.P., each article was signed simply as M.D., all other titles or positions, such as staff directorships, being omitted.

Second, all articles were rigidly deleted of personal pronouns and references to personal experiences.

Third, all polysyllabic technicalities were ruthlessly blue-penciled and every effort was made to secure articles not only accurate in detail but simple in expression and, whenever possible, with some intrinsic literary merit. Controversial subjects were tabu.

Finally, while a monotonous and parrot-like motif of "see your doctor" was studiously eliminated, the complete avoidance of any reference to self diagnosis or self treatment carried its own moral.

The Atlantic County Medical Society is using two other means of educating its public in health matters, the radio and accurate newspaper accounts of its scientific meetings. Both have proved quite satisfactory.

Twice a week for a period of fifteen minutes members of the society or distinguished medical visitors broadcast over station WPG. The announcer introduces the doctor by name

and states his subject but omits all titles, degrees or positions. The talks are plain, pointed and helpful, though aids in self diagnosis and self treatment are studiously avoided. The plan has been in operation for some time and has met the approval of lay listeners, the radio station and the profession.

For many years newspaper reporters sat wearily through the meetings of the medical society and wrote accounts for the press which contained an amazing amount of misinformation. For the past two years a member of the society with a nose for news has taken notes and after the meeting has had a press conference, so that the news accounts have been much more accurate, have contained but little misinformation and have been interesting to laymen as well as to the profession.

The public has responded well to the series of medical articles, to the radio talks and to the accounts of the medical meetings. It is true that the plan is young, but it is presented as an illustration of what can be done by any county society, large or small, in any county. It is admitted that to carry it out effectively is not easy; but the profession must recapture leadership in public health education. It can be done and done well if the desire to do it exists.

905 Pacific Avenue.

## Bureau of Legal Medicine and Legislation

### MEDICOLEGAL ABSTRACTS

**Optometry: Corporate Practice of Optometry Illegal in Kansas.**—The state, on relation of the attorney general, instituted original proceedings in quo warranto in the Supreme Court of Kansas against the defendant jewelry company, to determine whether it was engaged in the practice of optometry and, if so, to oust it from exercising any business as a corporation in the state. The corporation admitted that at the time of the filing of the petition, July 19, 1935, it employed a registered optometrist who made examinations and fitted glasses, and that all fees paid for services rendered by the optometrist were paid to the corporation which in turn paid the optometrist a specified salary. The corporation contended, however, that on the day on which the petition was filed against it, it "voluntarily" changed its method of doing business and rented to one Jacobs, a regularly licensed and practicing optometrist, space in its store and contracted with him to practice his profession in the rented space. As described by the Supreme Court, this contract provided:

The company agrees that in consideration of Jacobs maintaining the office and being in personal attendance during specified hours it will send to him for examination all customers for glasses coming to defendant's store requiring or requesting through its optical department such examination and will pay him for each examination \$2.75, settlement to be made on stated days. Jacobs agrees to purchase, maintain, and keep complete up-to-date equipment, and to make examinations of all customers on the basis of fees stipulated. Jacobs is also to have the right to carry on his own practice at said location and to collect and retain his fees therefor. Jacobs also agrees the company may by advertisement refer to the fact that an arrangement has been made with him to make such examinations, . . .

It would seem axiomatic, said the Supreme Court, where a statute requires a practitioner of optometry to be a person who is 21 years of age, of good moral character, and possessing specified educational qualifications, that no corporation may comply with such requirements. The court was convinced that the practice of optometry in Kansas is limited to individuals. The optometry act, continued the court, provides that any person shall be deemed a practitioner of optometry who shall display any advertisement offering in any manner to examine eyes, test eyes, or fit glasses with intent to induce people to avail themselves of the services advertised. The admission of the corporation that it advertised the free services of an optometrist convicted it of violating this provision of the act. The Supreme Court was not impressed by the argument on behalf

of the corporation that it changed its method of doing business on July 19, 1935, and that thereafter the optometrist was in control of the business and that it, the corporation, had no control over it. A similar arrangement was denounced, said the court, in *State v. Kindy Optical Company*, 216 Iowa 1157, 248 N. W. 332, in *Eisensmith v. Buhl Optical Company* (W. Va.), 178 S. E. 695, and in *Winslow v. Kansas State Board of Dental Examiners*, 115 Kan. 450, 223 P. 308. The contract of employment and the lease connected with it were devices, the court said, to avoid the provisions of the optometry practice act.

The Supreme Court therefore ordered that the corporation be ousted as a corporation exercising any claim, right or power to practice optometry, and that it be enjoined from doing any act constituting the practice of optometry. *State ex rel. Beck, Atty. Gen. v. Goldman Jewelry Co. (Kan.)*, 51 P. (2d) 995.

**Workmen's Compensation Acts: Relationship Between Silicosis and Disability; Expert Testimony.**—The sole question involved in this case was whether silicosis, which admittedly the claimant had, was a substantial factor in causing his disability, the exact nature of which the record does not disclose. The compensation commissioner dismissed the claim for compensation but, on appeal by the claimant, the superior court granted compensation. The employer thereupon appealed to the Supreme Court of Errors of Connecticut.

Three physicians testified before the commissioner. Two were of the opinion that silicosis was a substantial factor in causing the disability; the other, an expert in diseases of the lungs appearing for the employer, testified to the contrary. A finding or a conclusion, said the Supreme Court of Errors, cannot be held to be erroneous merely because it was based on the testimony or opinion of one witness in opposition to that of several others testifying to the contrary. A conclusion reached on comparison and examination of conflicting professional opinion, by reliance on one rather than another, can rarely be found erroneous in law in the absence of bad faith. The witness on whose testimony the commissioner relied in disallowing compensation gave as his reasons for his opinion that the silicosis was not a substantial factor in causing the disability the facts that the claimant was not suffering from shortness of breath, that the history given him by the claimant and his examination showed severe abdominal pain and tenderness from the beginning of the disability, and that the degree of silicosis, in his judgment, was late first or early second stage and not sufficient to cause disability. He testified that he did not have the benefit of a fluoroscopic examination in forming his opinion as had the two physicians who testified for the claimant. He was unable to determine the cause of the claimant's disability. We cannot say, said the court, that the commissioner could not have reasonably based his conclusion on the opinion advanced by this witness. In the conflict of opinion among the witnesses as to the cause of the claimant's disability, it was the province of the commissioner to determine the matter, and with his conclusion, the court said, neither the superior court nor the Supreme Court of Errors may interfere. The case was therefore remanded to the superior court with directions to dismiss the claimant's appeal. *Kulak v. Landers, Frary & Clark (Conn.)*, 181 A. 720.

## Society Proceedings

### COMING MEETINGS

- American Physiotherapy Association, Los Angeles, June 28-July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.
- Conference of State and Provincial Health Authorities of North America, Vancouver, B. C., June 22-24. Dr. A. J. Chesley, State Department of Health, St. Paul, Minn., Secretary.
- Maine Medical Association, Rangleey, June 21-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.
- Medical Library Association, St. Paul, June 22-24. Miss Janet Do. 2 E. 103d St., New York, Secretary.
- Montana Medical Association of Billings, July 8-9. Dr. E. G. Balsom, 208½ North Broadway, Billings, Secretary.
- North Pacific Pediatric Society, Victoria, B. C., June 24-25. Dr. M. L. Bridgeman, 1020 S. W. Taylor St., Portland, Ore., Secretary.
- Pacific Northwest Medical Association, Portland, Ore., July 8-11. Dr. F. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.

## Current Medical Literature

### AMERICAN

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Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Cancer, New York

26: 703-928 (April) 1936

- Multiple Primary Tumors of the Brain: Review of Literature and Report of Twenty-One Cases. C. B. Courville, Los Angeles.—p. 703.
- \*Malignant Melanomatosis. F. B. Plewes, Toronto.—p. 732.
- Thyroxine Production in Metastases from Carcinoma of Thyroid. R. B. Engelstad, Oslo, Norway.—p. 738.
- \*Experimental Production of Visceral Tumors with Hydrocarbons. F. W. Ilfeld, Boston.—p. 743.
- Production of Cancer by Hydrocarbons Other Than Those of Phenanthrene Type. A. A. Morton, C. F. Branch and D. B. Clapp, Boston.—p. 754.
- Relation Between Incidence of Mammary Cancer and Nature of Sexual Cycle in Various Strains of Mice: II. Relative Constancy of Characteristics of Sexual Cycle in These Strains. V. Suntzeff, E. L. Burns, Marian Moskop and L. Loeb, St. Louis.—p. 761.
- Precipitation Tests in Mice: Preliminary Report: I. Cancer; II. Comparative Study of Cancer Susceptible and Immune Mice. L. C. Strong and T. H. Werner, Bar Harbor, Maine.—p. 767.
- Effect of Shwartzman Reaction with Bacterial Filtrate on Transplantable Tumors in Animals. M. Jacobi, Brooklyn.—p. 770.
- Carcinoma of Tongue in a New-Born Child: Report of Case. L. W. Frank, C. D. Enfield and A. J. Miller, Louisville, Ky.—p. 775.
- Primary Adenocarcinoma of Liver in a Rooster. J. C. Norris, Atlanta, Ga.—p. 778.
- Adenocarcinoma of Sigmoid with Lymphatic Leukemia Blood Picture: Case. C. Reich, New York.—p. 781.
- Preparation of Dispersions of Carcinogenic Hydrocarbons in Serum: Note. E. Lorenz and H. B. Andervont, Boston.—p. 783.

**Malignant Melanomatosis.**—Plewes cites a case of malignant melanomatosis in which the first manifestations were those of sacro-iliac disease of rapid onset. The diagnosis was finally established by biopsy as secondary melanotic sarcoma. Search of numerous cutaneous moles, eyes, rectum and other possible sites for primary malignancy failed. There was widespread dissemination of malignant tumors, sometimes nonpigmented, which especially invaded the pelvic bones as well as the spine, ribs and skull, large veins and serous surfaces, and lymph nodes.

**Visceral Tumors Induced with Hydrocarbons.**—Ilfeld's experiments show that cancer can be induced in some of the visceral organs with certain carcinogenic hydrocarbons. He implanted cholesterol pellets containing 5 per cent of either 1:2:5:6-dibenzanthracene, methylcholanthrene or 1:2 benzpyrene into the kidney, spleen, liver, uterus, testicle, bone marrow, subperiosteum, stomach or brain of 244 experimental animals. Twelve renal tumors were caused by 1:2:5:6-dibenzanthracene cholesterol pellets and were epidermoid carcinomas. One renal tumor was transplanted through four generations of mice. The tumors seem to have originated from renal pelvic epithelium. There was a definite incubation period (average nine months) for the renal tumor; i. e., until it was large enough to be felt. The malignant change in mice and rats required a period of months. Examination of the fourteen kidneys containing dibenzanthracene pellets and having no tumor showed a moderate inflammatory reaction around the pellet with infiltration of polymorphonuclear leukocytes, lymphocytes and monocytes. In some slides renal pelvic epithelium partially or completely surrounded the pellet either in a single or in a stratified layer. This first reaction of the epithelium seemed to be a protective mechanism. The epithelial cells in most instances were supported by dense collagenous connective tissue. After coming into contact with the hydrocarbon, the epithelial cells became stratified and later assumed malignant characteristics, as shown by invasive downgrowths. The prolonged tumor incubation period might be considered as pointing to chronic irritation as the causative factor rather than chemical change. However, the evidence is not sufficient to

warrant a definite conclusion. The animals which had received the largest doses of dibenzanthracene developed tumors the earliest. While the amount of dibenzanthracene in the pellet varied from 0.08 to 0.6 mg., the amount of dibenzanthracene actually in contact with the cells was only that present on the surface of the pellet. Compared with the total amount of dibenzanthracene present in the pellet, this must have been a very small quantity. One fibrosarcoma was produced in the experiment. In this instance a pellet containing methylcholanthrene had been implanted in the spleen of a stock mouse. This tumor originated either from the connective tissue of the spleen or from the stroma of the pancreas, probably the former. In two tumors of the liver caused by dibenzanthracene the microscopic appearance is indefinite, because of postmortem changes; in one of these tumors it is consistent with the appearance of a primary liver cell carcinoma. A uterine tumor caused by dibenzanthracene is an epidermoid carcinoma originating from the endometrium. The results of inserting pellets into the other organs so far have been negative.

#### American J. Obstetrics and Gynecology, St. Louis

31: 549-730 (April) 1936

- \*Probable Role of Hypercholesterolemia of Pregnancy in Producing Vascular Changes in Placenta, Predisposing to Placental Infarction and Eclampsia. R. A. Bartholomew and R. R. Kracke, Atlanta, Ga.—p. 549.
- Fetal Blood Studies: V. Role of Anesthesia in Production of Asphyxia Neonatorum. N. J. Eastman, Baltimore.—p. 563.
- Period of Puberty and Inception of Menstruation. C. F. Fluhmann, San Francisco.—p. 573.
- Statistical Studies on Puerperal Infection: II. Analysis of Five Hundred and Forty-Five Cases of Puerperal Infection (Including Comparison Between Them and Similar Group of Cases with Normal Puerperiums). C. H. Peckham, Baltimore.—p. 582.
- Dührssen's Incisions: Analysis of Five Hundred and Ninety-Two Cases. A. B. Hunt, Rochester, Minn., and W. B. McGee, San Diego, Calif.—p. 598.
- Argyria Uteri. G. Gellhorn, St. Louis.—p. 613.
- Varying Patterns of Dried Blood Serum of Women. J. T. Smith, Cleveland.—p. 618.
- \*Interstitial Radiation of Cervix, with Suggested Modification of Tausig's Operation. C. Duncan, Brooklyn.—p. 623.
- Double Malignant Tumors of Uterus. V. S. Counseller and W. L. Butsch, Rochester, Minn.—p. 628.
- Treatment of Amenorrhea: II. Effects of Anterior Pituitary-like Hormone from Urine of Pregnant Women: Eleven Trials in Four Patients. J. Rock and M. K. Bartlett, Boston.—p. 634.
- Incidence and Treatment of Secondary Anemia in Outpatient Maternity Patients. O. J. Toland, Philadelphia.—p. 640.
- Role of Amniotic Sac in Labor. L. C. Spademan, Detroit.—p. 645.
- Hemoglobinuria as Symptom of Ruptured Ectopic Pregnancy. W. T. Pommerenke, Rochester, N. Y.—p. 650.
- Treatment of Senile Vaginitis with Estrogenic Hormones. A. Jacoby, New York, and B. Rabbiner, Brooklyn.—p. 654.
- Analysis of Five Hundred and Sixty-Nine Forceps Operations. H. F. Kane and H. P. Parker, Washington, D. C.—p. 657.
- Adenocarcinoma of Supernumerary Breasts of Labia Majora in Case of Epidermoid Carcinoma of Vulva. H. J. Greene, Brooklyn.—p. 660.
- Observations on Use of Collip's Emmenin in Menopause. Catharine Macfarlane, Philadelphia.—p. 663.
- Massive Collapse of Lung Complicating Parturition. H. B. Wilson, Hackensack, N. J.—p. 667.
- Pregnancy in Sporadic Cretinism. R. J. Patton, Ann Arbor, Mich.—p. 670.
- Normal Human Ovum in Stage Preceding Primitive Streak. E. A. Edwards, H. O. Jones and J. I. Brewer, Chicago.—p. 672.
- Spontaneous Delivery Complicated by Rectal Stricture, Rectovaginal Fistula and Rupture of Rectum. F. A. Kassebaum and M. J. Schreiber, New York.—p. 674.
- Septate Vagina Complicating Labor. G. N. Adamson, Chicago.—p. 676.
- Fibromyoma of Cervix Uteri: Three Cases, One Developing Cervical Stump After Hysterectomy. J. P. Greenhill, Chicago.—p. 678.
- Interstitial Pregnancy. F. C. Spencer, Honolulu, Hawaii.—p. 680.
- Complete Torsion of Tube and Ovary Complicating Pregnancy. D. Sheldon, Sandusky, Ohio.—p. 682.
- Obstetric Effigies of Mound Builders of Eastern Arkansas. S. C. Dellinger, Fayetteville, Ark., and E. G. Wakefield, Rochester, Minn.—p. 683.
- Primary Tuberculosis of Vagina. J. L. McGoldrick, Brooklyn.—p. 684.
- Fatal Case of Yeast Meningitis in Pregnancy. H. J. Timmerman, Chicago.—p. 686.

**Hypercholesterolemia of Pregnancy.**—Bartholomew and Kracke believe that the hypercholesterolemia of pregnancy is probably a normal physiologic response to meet the requirements of rapid cell growth in the fetus and prepare for lactation. An excessive degree of hypercholesterolemia of pregnancy is probably due to hyperpituitary or hypothyroid activity and

is further increased by a diet high in cholesterol-containing foods. Hypercholesteremia is probably the fundamental basis for the toxemias of pregnancy. It probably is responsible for nausea and vomiting of pregnancy, through an increased secretion into the bile until storage of this material can take place in the reticulo-endothelial system. Excessive storage in the liver in the first half of pregnancy is probably the cause of excessive fatty change in the periphery of the liver lobules with subsequent central necrosis in the inner zone of the lobules, which is so consistently found in fatal cases of pernicious vomiting of pregnancy. Excessive storage in the placental arteries with resulting vascular changes is the predisposing cause of infarction in the placenta. Thrombosis or rupture of a placental artery, occurring either spontaneously or produced by the trauma of fetal movements, is the exciting cause of acute infarction in the placenta. Acute or subacute infarction in the placenta results in autolysis of the affected tissue, with the liberation of peptone, guanidine and histamine as toxic split products of placental protein. The amount and location of the infarction, the degree of vessel obstruction and the rapidity of autolysis determine whether preeclampsia of mild or severe degree, eclampsia or premature detachment of the placenta will occur. If hypercholesteremia is the fundamental basis for the toxemias of pregnancy, it would seem that prophylaxis should be directed toward neutralizing the effect of excessive secretion of cholesterol into the intestinal tract through the bile and preventing excessive storage of cholesterol in the endothelial system by the administration of thyroid extract or iodine and restricting the use of fats and cholesterol-containing foods during pregnancy.

**Interstitial Irradiation of Cervix.**—Duncan suggests the following modification to Taussig's procedure (*Am. J. Obst. & Gynec.* 28:650 [Nov.] 1934; abstr. THE JOURNAL, Jan. 12, 1935, p. 152): 1. That the patient receive the initial roentgen and radium irradiation locally two months prior to operation and that the radium dose not exceed 6,000 mg. hours. 2. That the blood supply of the uterus be reduced by the resection of the uterine arteries, as reduction of blood supply decreases the spread of malignant tumors. 3. That sixteen 1-millicurie radon seeds be implanted; eight in the lower uterine segment, two in each broad ligament near the uterus and two in each sacro-uterine ligament. This would give a total radiation dose of 2,128 millicurie hours. 4. That all the retroperitoneal fat that is exposed be removed, for it may contain small lymph nodes.

### American Journal of Ophthalmology, St. Louis

19: 287-370 (April) 1936

- \*Congenital and Familial Cysts and Flocculi of Iris. A. Cowan, Philadelphia.—p. 287.
- Aniseikonia. E. J. Ludvig, Boston.—p. 292.
- Value of Ophthalmoscopic Examination in Diagnosis of Systemic Diseases. W. M. Yater, Washington, D. C.—p. 302.
- Familial Cornea Plana, Complicated by Cataracta Nigra and Glaucoma. H. Barkan and W. E. Borley, San Francisco.—p. 307.
- Synthetic Suprarenin Bitartrate as Mydriatic. W. D. Horner and J. Bettman, San Francisco.—p. 311.
- Cause of Voluntary Forward Luxation of Eyeball: Case Report with Anatomic Findings at Necropsy. D. J. Lyle and J. S. McGavie, Cincinnati.—p. 316.
- Dinitrophenol Cataracts with Signs of Tetany. E. B. Spaeth, Philadelphia.—p. 320.
- Phytopharmacologic Approach to Some Ophthalmologic Problems. D. I. Macht, Baltimore.—p. 324.
- Postoperative Endogenous Infections of Eye: Report of Unusual Case. D. Kravitz, Brooklyn.—p. 328.

### Congenital and Familial Cysts and Flocculi of Iris.

Cowan observed four cases of familial and congenital cysts of the retinal pigment layer of the iris, three of which he describes; in the fourth patient, now dead, a sister of one of the present patients, the anomaly was pronounced. The cysts were bilateral in each instance and consisted of pigmented masses and pouches filled with fluid, which projected from the posterior layers of the iris through the pupil and into the anterior chamber. Contraction of the pupil caused them to protrude farther into the anterior chamber. The cysts were capable of emptying and refilling. The ocular examinations were otherwise negative except that one patient had a divergent concomitant squint. Medical examination was negative in two of the cases; in the other there was a history of mental deficiency and chorea. The familial tendency of the condition in

these cases is sufficient verification that it is congenital in character, and that it is developmental and not the result of intra-uterine traumatism, as has been proposed. The theory of von Szily and Gallemaerts that it is due to a failure of closure of the annular sinus is logical, but the appearance of the stroma in these cases proves that this also is faulty in development and should be included in the malformation. The anomaly differs only in degree from that which is termed congenital ectropion uveae. There is also some justification for the traction theory of Vogt in the fibrous bands at the 2 o'clock position. But this was the only place in which, after careful observation of all six eyes, even a semblance of any adhesion was found between the pigmented epithelium and the stroma. It hardly lends weight to Vogt's hypothesis.

### American Review of Tuberculosis, New York

33: 435-584 (April) 1936

- \*Pneumoperitoneum in Intestinal Tuberculosis: Appraisal of Various Therapeutic Procedures. D. Salkin, Hopemont, W. Va.—p. 435.
- Leukocytic Counts During Bedrest Compared with Those During Exercise in Tuberculous and Nontuberculous Cases. E. M. Medlar, Mount McGregor, N. Y.—p. 473.
- Bilateral Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. H. F. Carman, Dallas, Texas.—p. 491.
- \*Bilateral Simultaneous Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis: Report of Thirty-Six Patients. J. N. Corsello and R. M. Bruckheimer, Cassadaga, N. Y.—p. 502.
- Effusion Following Artificial Pneumothorax: Review of One Hundred and Fifty Cases at Essex Sanatorium, Middleton, Mass. J. I. Weisman, Springfield, Mass.—p. 522.
- End Results of Surgical Treatment of Pulmonary Tuberculosis. P. B. Matz, Washington, D. C.—p. 533.
- Observations on Tuberculosis Work in Germany. H. E. Kleinschmidt, New York.—p. 549.
- Cost of Tuberculosis to Industry, to the Individual and to the Community. W. A. Sawyer and E. K. Richard, Rochester, N. Y.—p. 558.
- Inexpensive Synthetic Medium for Growing Mycobacterium Tuberculosis. S. Wong and J. Weinzierl, Seattle.—p. 577.

**Pneumoperitoneum in Intestinal Tuberculosis.**—Salkin declares that the treatment of secondary ulcerative intestinal tuberculosis is at the present time in the same stage as pulmonary tuberculosis was ten years ago. A hopeful view may now be taken despite the absence of a specific cure, as the various available modes of therapy may remove 80 per cent of the severe cases as complicating factors. Drugs and calcium are of secondary importance in themselves but highly useful with other agents; surgery has a very limited place; the diet may be individually selected. Ultraviolet irradiation benefits 40 per cent of moderate and 15 per cent of severe cases; vitamins benefit 67 per cent of moderate and 27 per cent of severe cases; pneumoperitoneum benefits all moderate and 80 per cent of severe cases. A new classification is offered, based on the roentgenologic extent of the lesion and the degree of symptomatic severity. The ulcerated intestine is influenced by two factors in its production of a state of spasm or irritability; namely, a local neuromuscular reaction and an extrinsic afferent-parasympathetic efferent reflex. It is possible that light and vitamins affect the threshold of irritability of the local factor, whereas pneumoperitoneum disturbs the proper function of the extrinsic reflex. Healing of ulcers takes place by a local and general increase of immunity further benefited by release of spasm and removal of distressing symptomatology. The existing views on prophylaxis and therapy must be modified and the presence of intestinal disease be regarded as an indication for active pulmonary collapse. The mode by which the air acts on the extrinsic nerves is problematic. The air acts by dampening the stimuli and thus may be likened to a buffer. The author concludes that air therapy acts by removing the extrinsic nerve reflex by a mechanical buffer action. The fact that ascites often causes an asymptomatic state in an ulcerated intestine shows further the mechanical action of a fluid body in the peritoneal cavity.

**Bilateral Pneumothorax in Treatment of Tuberculosis.**—Corsello and Bruckheimer do not advocate that all cases of advanced tuberculosis be subjected to bilateral pneumothorax irrespective of the patient's condition, but the measure should not be considered an agency of last resort. Cases that are obviously terminal or those in which the patient is dyspneic even while at rest because of extensive disease should not be subjected to the treatment. Those presenting caseopneumonic

lesions have responded most poorly to the treatment. Complications occurring during the course of treatment are the same as in unilateral pneumothorax: the most spectacular and distressing complication is that of a ruptured lung. While complications occur more frequently than in unilateral pneumothorax, this increased incidence is not great enough to contraindicate its use. Coulaud, among others, advises that patients with clinical tuberculous enteritis should not be treated by this method. However, the authors cannot wholly subscribe to this view. An involvement such as this undoubtedly adds to the hazards of the case, but recovery is possible in certain instances if satisfactory pulmonary collapse is obtained. In their patients who had intestinal tuberculosis and in whom the result was unsuccessful, they find that without exception all had unsatisfactory collapse of one or both sides. It is conceivable that with effective pneumothorax the result might have been different. One patient, who was gravely ill and had a severe intestinal involvement, made a gratifying recovery after both lungs were effectively collapsed. Of the authors' thirty-six patients having advanced pulmonary tuberculosis treated by bilateral simultaneous artificial pneumothorax, twenty-one are still alive, in eighteen of whom the disease is arrested or apparently arrested, and two are improved. One has suffered a recent reactivation of the disease after being well for two years, one year of which was after termination of treatment. Seven of those now living have returned to work. Nine others should be able to work in the near future.

### Annals of Surgery, Philadelphia

103: 481-640 (April) 1936

- \*Surgical Treatment of Syringomyelia. C. H. Frazier and S. N. Rowe, Philadelphia.—p. 481.  
Complete Sympathectomy: Observations of Certain Vascular Reactions During and After Complete Exclusion of Sympathetic Nervous System in Dogs: Experimental Study. H. Wilson, N. W. Roome and K. Grimson, Chicago.—p. 498.  
\*Lumbar Ganglionectomy and Trunk Resection in Chronic Arthritis. F. A. Bothe, Philadelphia.—p. 510.  
Therapeutic Effects Following Interruption of Sympathetic Nerves: Report on Alcohol Block in Certain Arthritis and Vascular Cases. R. H. Patterson and W. J. Stainsby, New York.—p. 514.  
Use of Avertin (Tribrom-Ethanol) in Neurosurgery. J. Rossier, Lausanne, Switzerland, and W. P. Van Wagenen, Rochester, N. Y.—p. 535.  
Tumors of Carotid Body. E. W. Peterson and L. H. Meeker, New York.—p. 554.  
Digestive Phenomena in Psychopathic Patient. E. L. Eliason and V. W. M. Wright, Philadelphia.—p. 572.  
Liver Stones. I. G. Ruffanov, Moscow, U. S. S. R.; translated by A. J. Walscheid, New York.—p. 580.  
True Proliferating Cystic Lymphangioma of Mesentery. E. O. Parsons, Kansas City, Mo.—p. 595.  
Conservative Treatment of Acute Hematogenous Osteomyelitis. E. T. Crossan, Philadelphia.—p. 605.  
Ort Treatment of Pyogenic Osteomyelitis. J. Kulowski, St. Joseph, Mo.—p. 613.  
End Results of Excision of Elbow. B. F. Buzby, Camden, N. J.—p. 625.

**Surgical Treatment of Syringomyelia.**—Frazier and Rowe report two cases of syringomyelia in which surgical treatment resulted in improvement over periods of four and one half and two years, respectively. Fourteen additional cases from other clinics, whose period of postoperative observation was one year or more, have been analyzed. A review of the results in the sixteen cases shows that eight of the patients were sufficiently improved to return to their former occupations. Sex, age, the extent of the process or the preoperative clinical picture seemed to have little bearing on the operative results. Probably the duration of the disease and the technic employed may influence the end results to a certain extent. A review of the various technics employed suggests that: 1. A vertical chordotomy in the midline posteriorly or a few millimeters lateral to it on the side of the greatest cord damage (as evidenced by the clinical picture) is the most efficacious and the least dangerous approach to the syringomyelic cavity. 2. An attempt at establishing permanent drainage by the use of drainage material seems worth while. 3. If, after the initial drainage, the clinical course suggests a closure of the incision into the syringomyelic cavity, a second operation is indicated.

**Lumbar Ganglionectomy and Trunk Resection in Arthritis.**—Bothe points out that, from the results obtained to date, lumbar ganglionectomy is indicated only in a small per-

centage of patients with arthritis. It has not been used in osteo-arthritis or in hypertrophic or degenerative arthritis. The patient's general health should be maintained at the highest possible point at all times to obtain the best results. The post-operative restitution of use of the involved parts should be very slow and conservative. Heat and other physical therapeutic measures should be used with moderation as indicated. Orthopedic measures should be instituted to correct or overcome deformities. A borderline case is reported in which the clinical diagnosis was atrophic arthritis accompanied by or secondary to a vasomotor vascular disease of the extremities. The patient remained in the hospital for a period of five months, during which time all types of medical treatment had been instituted with no improvement. A bilateral lumbar ganglionectomy and trunk resection were performed. A periarterial sympathectomy was performed on the left common iliac artery. There was immediate improvement in the surface temperature and color of the involved parts. The postoperative routine of gradual introduction of exercise to the involved parts was instituted. The patient left the hospital five weeks after the operation, able to walk with crutches. Four months after operation she was using a cane and walked with very little difficulty. Her general condition had improved greatly, the swelling of the parts had disappeared and there was only a slight degree of pain produced on motion of the involved joints. After discarding the cane, only a limited amount of walking was permitted, but exercise was gradually increased. Twenty-two months after the operation, her general appearance was that of a normal healthy girl. She had been able to attend school regularly for one and one-half years and was able to walk an unlimited distance without any pain or disability. Two years after operation the patient stated that she continues to notice a gradual increase in her ability to use the lower extremity, and on palpation there was no evidence of any lowered surface temperature in the right leg. A cervicothoracic sympathectomy may also be performed when this condition exists in the upper extremities.

### Archives of Neurology and Psychiatry, Chicago

35: 701-936 (April) 1936

- \*Spontaneous Intracerebral Hemorrhage: Etiology and Surgical Treatment, with Report of Nine Cases. W. M. Craig and A. W. Adson, Rochester, Minn.—p. 701.  
Lactic Acid Content of Blood and of Cerebrospinal Fluid. S. B. Wortis and Frances Marsh, New York.—p. 717.  
Mental Changes Following Head Trauma in Children. A. Blau, New York.—p. 723.  
Galvanic Skin Reflex and Danielopolu Test in Psychoneurotic Patients. T. L. Feintress and A. P. Solomon, Chicago.—p. 770.  
Graphic Charting Method for Use in Recording Seizures of Patients with Epilepsy. Theodora Wheeler, Chicago.—p. 776.  
\*Effect of Increased Oxygen Pressure on Seizures of Epilepsy. W. G. Lennox and A. R. Behnke Jr., Boston.—p. 782.  
Effect of Experimental Temporary Vascular Occlusion on Spinal Cord: I. Correlation Between Structural and Functional Changes. L. L. Tureen, St. Louis.—p. 789.  
Macular Vision Following Cerebral Resection. J. C. Fox Jr. and W. J. German, New Haven, Conn.—p. 808.  
Origin of Senile Plaques. S. Hiroisi and C. C. Lee, Fukuoka, Japan.—p. 827.  
Neural Projection of Cochlear Spirals on Primary Acoustic Centers. F. H. Lewy, Philadelphia, and H. Kobrak, Chicago.—p. 839.

**Spontaneous Intracerebral Hemorrhage.**—Craig and Adson state that in two of their nine cases the etiology of spontaneous intracerebral hemorrhage was definitely the result of trauma. In another case the symptoms occurred two weeks after a period of strenuous exertion and emotional strain. In another case the hemorrhage was associated with rheumatic heart disease and endocarditis due to *Streptococcus viridans*, suggesting bacteriologic origin. In another case the etiology is uncertain, as the patient was found unconscious after having fallen from a wagon, and it was difficult to determine whether or not the unconsciousness preceded the fall. In two cases hemorrhage evidently occurred spontaneously when the patients (one a woman) were under emotional stress; there were no other etiologic factors. In the eighth case hemorrhage must have been traumatic in origin, although there was a history of injury twelve years previously, and in the ninth case hemorrhage occurred suddenly without apparent cause. After the clot had been evacuated and the cavity explored at operation there were no active bleeding points; in one case a pseudo-membrane surrounded the hemorrhage, and it was removed.

This would seem to disprove the theory that the bleeding was of arterial origin; it is the authors' opinion that the spontaneous intracerebral hemorrhage was of venous origin.

**Effect of Increased Oxygen Pressure on Epilepsy.**—Lennox and Behnke subjected to a high oxygen tension three young women who were having numerous petit mal attacks daily and with whom experience over a period of years had demonstrated that seizures invariably followed either the breathing of a low oxygen mixture or hyperpnea. On five occasions, one or more of the patients and the authors spent from three and one-half to five hours in a compression chamber under an absolute pressure of 4 atmospheres. Aside from the effect on seizures, they observed that, while under pressure, patients experienced about the same degree of mild intoxication as the observer. The only suggestive neurologic symptom was paresthesia in the distribution of an ulnar nerve in one patient. On days on which experiments were not carried out and which may be considered representative of the normal record of the patients, they had seizures at the average rate of 1.43 per hour; in the chamber the rate was 0.78 per hour. The excitement and discomfort of the experience might be expected to cause some increase in the number of seizures, but during the period of increased pressure spontaneous attacks were only 55 per cent as frequent as usual. Observations were made to determine the effect of varying pressures of oxygen on the length of time required to induce a seizure by this means. During the period of the test, patients while breathing oxygen were under an oxygen pressure nearly five times greater than the pressure while breathing air. Pressures of oxygen between zero and 3,000 mm. of mercury were obtainable. Twenty-eight hyperpnea experiments were made. The volume of air respired was calculated from the excursions of the bell of a Collins basal metabolism machine. In each of the patients, as the pressure of oxygen was increased, precipitation of a seizure by over-ventilation progressively required more time. The previous state of oxygen pressure seemed to exercise some influence. With a patient at a certain pressure, a greater volume of hyperpnea was necessary to induce a seizure when the patient was "coming down" from a higher pressure than when she was "going up." In one patient, when oxygen pressure was increased twenty-fold, the lung ventilation required to produce a seizure increased five-fold. Decreased oxygen tension tends to precipitate and increased oxygen tension tends to prevent petit mal seizures.

### Archives of Ophthalmology, Chicago

15: 589-802 (April) 1936

- Functional Disturbances of Eyes. A. Bielschowsky, Hanover, N. H.—p. 589.  
Homonymous Hemianopia: Practical Points in Interpretation, with Report of Forty-Nine Cases in Which the Lesion in the Brain Was Verified. T. H. Johnson, New York.—p. 604.  
Contact Glasses, the "Invisible" Spectacles. J. Dallos, Budapest, Hungary.—p. 617.  
\*Artificial Fever Therapy in Cases of Ocular Syphilis. A. M. Culler and W. M. Simpson, Dayton, Ohio.—p. 624.  
Association of Ectopia Lentis with Arachnoidactyly. F. E. Burch, St. Paul.—p. 645.  
Advanced Stage of Diktyoma: Report of Case. P. S. Soudakoff, Peiping, China.—p. 680.  
Tumor of Optic Nerve: Report of Case. F. A. Kiehle, Portland, Ore.—p. 686.  
Anatomic Phorias. F. W. Dean, Council Bluffs, Iowa.—p. 692.  
Primary Tumor of Optic Nerve: Report of Case. T. O. Coston, Baltimore.—p. 696.

**Artificial Fever Therapy in Ocular Syphilis.**—Culler and Simpson subjected fifty-eight patients with syphilis who had an ocular complication of the disease to artificial fever therapy. In the fifty-eight cases diagnosis of the primary conditions was made in sixty-two eyes. In the 116 eyes associated secondary conditions due to syphilis were observed. The Kettering hypertherm was used for the induction and maintenance of fever. Approximately fifty hours of fever with temperatures above 105 F. in ten weekly sessions of five hours each was the rule. A course of thirty injections of bismarsen was given in conjunction with the fever treatments. Most of the patients with ocular syphilis who were chosen for this study had failed to respond to orthodox therapy. Of the eleven patients with interstitial keratitis, eight had experienced recurrences and ten had failed to respond to chemotherapy. The

duration of the disease and the tendency to recurrence appear to be distinctly lessened after the adequate fever therapy combined with chemotherapy. The response is most prompt in the cases in which an opaque central disk of plastic exudate exists. In ten cases of exudative uveitis prompt clinical improvement became apparent in every instance after the first one or two fever treatments. Nine patients recovered useful vision. Favorable response occurred in the lesions of fourteen patients with optic neuritis and neuroretinitis. All the patients recovered useful vision, although nine have residual pallor of the disk and some degree of contraction of the fields. Active neuritis of the optic tract appears to be arrested by fever therapy. Active choroiditis in seven patients subsided with fever therapy, with residual scars and defects of the fields. Good central vision resulted in all but one eye. In sixteen patients with atrophy of the optic nerve the visual acuity and visual fields remained practically unaltered after a course of fever therapy combined with chemotherapy. As in neurosyphilis, there is no parallelism between the clinical and the serologic response of syphilitic ocular disease to fever therapy combined with chemotherapy. The greatest field of usefulness for artificial fever therapy combined with specific therapy will ultimately be in its application to the early manifestations of syphilis, with a view to prevention of the often disastrous ocular complications.

### Canadian Medical Association Journal, Montreal

34: 369-486 (April) 1936

- \*Intracranial Division of Vestibular Portion of Auditory Nerve for Ménière's Disease. K. G. McKenzie, Toronto.—p. 369.  
Radiologic Findings in Prepyloric Lesions. A. C. Singleton, Toronto.—p. 382.  
Artificial Pneumothorax in Lobar Pneumonia: Report of Ten Cases. J. G. Howlett, R. Luft and E. B. Astwood, Montreal.—p. 387.  
Hodgkin's Disease of Bone. M. C. Morrison, London, Ont.—p. 393.  
\*Oxycephaly: Report of Two Cases in Brother and Sister. D. L. Klein and A. E. Childe, Montreal.—p. 397.  
Protamine Insulin. R. B. Kerr, C. H. Best, W. R. Campbell and A. A. Fletcher, Toronto.—p. 400.  
Mesenteric Lymphadenitis in Adolescents Simulating Appendicitis. D. C. Collins, Los Angeles.—p. 402.  
Significance of Menopausal Flowing. W. P. Tew, London, Ont.—p. 405.  
Making Ether an Ideal Anesthetic. W. N. Kemp, Vancouver, B. C.—p. 409.  
Ileus Associated with Transient Renal Insufficiency. N. B. Gwyn, Toronto.—p. 412.  
Some Entozoa of Man as Seen in Canada and South Africa. H. B. Fantham and Annie Porter, Montreal.—p. 414.  
Visceral Behavior in Neuroses. D. G. Campbell, Chicago.—p. 422.

**Intracranial Division of Auditory Nerve for Ménière's Disease.**—Since August 1931 McKenzie has carried out unilateral section of the vestibular portion of the auditory nerve on twelve patients. As a result of this experience he has concluded that it is possible to section the vestibular portion of the nerve with sufficient accuracy for clinical requirements. The caloric response is abolished and the attacks of vertigo cease, while at the same time the cochlear fibers function as before operation. The first patient was operated on in August 1931 but proved to be an unsatisfactory subject, as she had little or no hearing before operation. The second patient, however, had good hearing and satisfactorily proved the possibilities of this new procedure. One of the twelve patients died from a wound infection eleven days after operation. Apart from this unfortunate mishap, the results obtained have been very satisfactory. They are all extremely grateful for the relief which they have obtained, and although the postoperative period is short, varying from three years and five months to five months, one has no reason to anticipate a return of attacks. For a few weeks or months there has been a moderate degree of unsteadiness. This gradually disappears and patients become confident and cheerful and quite certain of their balance. Occasionally, on turning quickly in the dark, there is a slight tendency to fall to the involved side. Two of nine patients have had complete cessation of tinnitus, two were unchanged, and in five there has been a marked diminution. With two exceptions, all patients had an absence of the caloric response after operation. These have remained free from attacks, and this observation suggests that it is not necessary to cut all vestibular fibers to cure a patient. Of the twelve patients seven had such poor hearing on the involved side that it was of little importance to save the cochlear fibers. In each instance, however, the hearing which they did have was not impaired by the



operation and they have remained free of attacks. The remaining five patients had useful hearing, but two failures occurred in this group. One patient died and in the second case the cochlear fibers were unintentionally cut. The records of hearing before and after operation on the other three patients with good hearing illustrate the value of this operative procedure when it is desirable to save the cochlear fibers. The records show that hearing is being maintained on the involved side.

**Oxycephaly.**—Klein and Childe differentiate between true and delayed oxycephaly and what Greig terms "false oxycephaly." They cite two typical cases of true oxycephaly which occurred in a brother and sister. In spite of the obvious cranial deformity, the children had no complaints that would attract the attention of the examiner to the site of trouble. The diagnosis was established by the signs elicited on physical and roentgenographic examination. It has been suggested that oxycephaly may be hereditary, and the authors feel that their two cases tend to support this theory.

### Johns Hopkins Hospital Bulletin, Baltimore

58: 137-266 (March) 1936

Calcium and Phosphorus Studies: XII. Six Years' Clinical Experience with Viosterol in Prevention and Treatment of Rickets, Tetany and Allied Diseases. D. H. Shelling and Katherine B. Hopper, Baltimore.—p. 137.

Experimental and Pathologic Studies on Pathogenesis of Acute Hemorrhagic Pancreatitis. A. R. Rich and G. L. Duff, Baltimore.—p. 212.

### Journal of Lab. and Clinical Medicine, St. Louis

21: 663-774 (April) 1936

Observations on Hydrogen Ion Concentration of Clotting and Citrated Blood. J. H. Ferguson, University, Ala., and D. DuBois, New Haven, Conn.—p. 663.

Auricular Flutter with 1:1 Response: Case Report. J. B. Carter and E. F. Traut, Chicago.—p. 670.

\*Fluctuations in Basophilic Aggregation Counts with Meteorologic Alterations. G. H. Gowen, Chicago.—p. 677.

Lymphogranulomatosis (Hodgkin's Disease): Review of Sixty Cases. F. J. Krueger and O. O. Meyer, Madison, Wis.—p. 682.

Response of Blood Urea Nitrogen, Uric Acid and Plasma Cholesterol to Parental Liver Extract. D. Scheinberg, Philadelphia.—p. 690.

Autohemagglutinin. W. P. Belk, Ardmore, Pa.—p. 697.

\*Medical Aspects of Periodontoclasia and Gingivitis. J. C. Healy, F. H. Daley and Marian H. Sweet, Boston.—p. 698.

Blood Grouping in Infectious Diseases. H. Brody, L. W. Smith and W. I. Wolff, New York.—p. 705.

\*Hitherto Undescribed Micro-Organism of Alcaligenes Group. Elizabeth L. Hazen and Mary Mortillaro, New York.—p. 710.

\*Normal Magnesium Metabolism and Its Significant Disturbances. B. S. Walker and Elisabeth W. Walker, Boston.—p. 713.

Antipneumococcus Serum Containing Heterophile Antibody: Laboratory and Clinical Report. G. E. Rockwell and R. Tyler, Cincinnati.—p. 721.

Some Practical Consequences of Influence of Temperature on Iso-Agglutination. Isabelle M. Townsend and A. F. Coca, New York.—p. 729.

Oxygen Absorbing Power in Presence of Certain Diseases. R. D. McCullagh, T. Jaglenski and F. Klobucar, Cleveland.—p. 732.

Recent Advances in Endocrine Diagnosis and Treatment. J. H. Hutton, Chicago.—p. 736.

Modification of the Greenberg Technic for Colorimetric Determination of Serum Protein. A. S. Minot and Margaret Keller, Nashville, Tenn.—p. 743.

Influence of Composition of Antigen-Extracts for Some Serodiagnostic Tests on Syphilis (M. B. R. II and M. K. R. II). B. Josephson, Stockholm, Sweden.—p. 751.

New Diluting Pipet for Sahli Hemoglobinometer. H. Ulrich, Boston.—p. 755.

Synchronous Motor Electric Time Clock. A. L. Bennett, Omaha.—p. 757.

Importance of Leukocyte Counts in Phagocytic Tests. Ruth Westlund Jung, Chicago.—p. 760.

Round Table for Use in Pathologic Histology. J. McLean, New York.—p. 766.

cases of hypertension associated with a greater or lesser degree of renal damage, abnormally high serum magnesium values were found, the highest value being 4.2 mg. in a case of terminal nephritis. In a group of cases of hypertension without severe renal damage the maximum was 2.72, the minimum 1.86 and the mean 2.36 mg. It appears that, contrary to certain statements in the literature, serum magnesium may be elevated in moderate or severe renal insufficiency, especially if associated with hypertension.

### Journal of Urology, Baltimore

35: 417-490 (April) 1936

- Abnormalities and Plastic Surgery of Lower Urogenital Tract. H. H. Young, Baltimore.—p. 417.  
Cancer of Bladder: Study of Five-Year End Results in Six Hundred and Fifty-Eight Epithelial Tumors of Bladder in Carcinoma Registry of the American Urologic Association. The Committee of Carcinoma Registry.—p. 481.

### Michigan State M. Society Journal, Grand Rapids

35: 219-292 (April) 1936

- Pericarditis Complicating Subacute Bacterial Endocarditis. W. D. Young, Detroit.—p. 219.  
Presentation of Cases of Pancreatitis. E. C. Long, Detroit.—p. 222.  
Achlorhydria: Its Clinical Significance and Management. C. E. Vreeland, Detroit.—p. 226.  
Tuberculosis in the Elderly. W. H. Meade, Manistee.—p. 233.  
Diseases of Peripheral Arteries. W. G. Maddock, Ann Arbor.—p. 237.  
Subpectoral Abscess: Suppurative Infraclavicular Lymphadenitis: Report of One Case. R. D. Scott, Flint.—p. 242.  
What the Public Expects from the Maternal Health League. H. A. Furlong, Pontiac.—p. 244.  
Nominal or Amnesic Aphasia: Report of Case. H. S. Mellen and I. L. Polozker, Eloise.—p. 245.  
Pathogenesis and Treatment of Subcutaneous Edema. G. B. Myers, Detroit.—p. 249.  
Cancer Survey of Michigan. F. L. Rector, Evanston, Ill.—p. 254.

### Minnesota Medicine, St. Paul

19: 195-268 (April) 1936

- Responsibility of the General Practitioner in the Tuberculosis Program of the Future. F. M. Pottenger, Monrovia, Calif.—p. 195.  
Chronic Myocardial Disease. H. J. Lloyd, Mankato.—p. 203.  
\*Heterophile Pneumococcus Serum in Therapy of Lobar Pneumonia. J. F. Noble and F. E. Kibler, St. Paul.—p. 205.  
Acute Atrophy of Bone: Report of Unusual Case Involving Radius and Ulna. M. S. Henderson, Rochester.—p. 214.  
Urethral Diverticulum. W. Walters and N. W. Thiessen, Rochester.—p. 218.  
Dietary Aids in Control of Constipation and Diarrhea. P. W. Brown, Rochester.—p. 221.  
Recognition and Conservative Treatment of Hydronephrosis. T. H. Sweetser, Minneapolis.—p. 223.  
Advances in General Anesthesia. R. M. Tovell, Rochester.—p. 227.  
Postpartum Hemorrhage. J. A. Urner, Minneapolis.—p. 234.

**Heterophile Pneumococcus Serum for Lobar Pneumonia.**—Noble and Kibler discuss 146 cases of lobar pneumonia treated at the Ancker Hospital between November 1934 and June 1935. Fifty patients were treated with heterophile pneumococcus serum and ninety-six received nonspecific therapy. Of the fifty patients treated with serum, nine died. Of the ninety-six patients treated nonspecifically, thirty-eight died. This appears to be a significant difference; however, the number of treated cases is small, and the control series is not beyond some criticism. The death rate in the nonserum cases is high, which is not unusual in certain epidemics of lobar pneumonia among the class of patients treated in a charity institution, such as the Ancker Hospital. Charts are presented showing the cases treated by serum and the nonspecifically treated cases arranged in age groups, analysis as to death rate in the four types of pneumococcal infection, the blood culture observations, and the time relationship between the onset of the pneumonia and the first dose of serum. The cases are analyzed as to the relationship of the time of onset to the time of hospitalization and a fourfold table for the forty-eight cases treated with heterophile serum and the seventy-two control subjects less than 60 years of age is given. The best that can be hoped for serum therapy in the treatment of lobar pneumonia is a decrease in mortality. In this series, it was felt that at least half of the patients were definitely improved clinically following the therapy, but there has been no statistically proved decrease in mortality. The probability integral of 0.12 is encouraging (Chi square), and, if this or better probability figures can be shown in other

similar series, the result would be considered encouraging. It is planned in the series now being studied to include determinations on the serum heterophile antibody in lobar pneumonia in treated and untreated cases.

### New England Journal of Medicine, Boston

214: 665-714 (April 2) 1936

- Rôle of Mental Hygiene in General Practice. C. Stein, Palmer, Mass.—p. 665.  
Urologic Complications in General Surgery. G. G. Smith, Boston.—p. 672.  
Foreign Bodies in Air and Food Passages. J. A. Coyle and L. K. Sycamore, Hanover, N. H.—p. 677.  
Care of the New-Born. R. S. Eustis, Boston.—p. 681.  
Study in Feigned Murder. J. W. Battershall, Attleboro, Mass.—p. 686.  
The Golden Age of Medical Endowments. H. A. Christian, Boston.—p. 688.

214: 715-762 (April 9) 1936

- Development of Neutralizing Substance for Poliomyelitis Virus in Vaccinated and Unvaccinated Individuals. W. L. Aycock, Boston, and C. C. Hudson, Greensboro, N. C.—p. 715.  
Common Occurrence of Serious Involvement of the Heart in Hypertension: Note. P. D. White, Boston.—p. 719.  
Radiologic Management of Cancer of the Breast. R. Dresser, Boston, and V. A. Pelletier, Norwood, Mass.—p. 720.  
Duodenal Stump Closure in Gastric Resections with Modified Furniss Clamp. H. M. Clute, Boston.—p. 724.  
\*Recrudescence of Ovarian Function After Heavy Irradiation: Two Cases. G. Van S. Smith, Brookline, Mass.—p. 725.  
Benjamin Shattuck of Templeton: Medical Practitioner. G. C. Shattuck, Boston.—p. 727.  
\*Does Modified Measles Confer Lasting Immunity? J. H. Townsend, Boston.—p. 732.

**Recrudescence of Ovarian Function After Irradiation.**—Smith cites the cases of two women in whom periodic uterine bleeding occurred after truly large doses (a total of 6,000 and 5,400 mg. hours, respectively) of radium, and from whom functioning endometrium was obtained, indicating a return of ovarian activity. The first patient may have had ectopic ovarian tissue or a granulosa cell tumor, but this seems unlikely since she responded so well to a second treatment, remaining symptom-free thus far for three years and eight months. The diffuse enlargement of her uterus at the time of the second treatment, on the other hand, suggests the presence of a granulosa cell tumor. If the other patient had ectopic ovarian tissue, a return of function (amenorrhea for seven years) would have been expected sooner. The fact that her menstruation has been normal since reestablishment is on the whole against the presence of a granulosa cell tumor, although one such case has been encountered at the author's clinic. The finding of an endometrium showing the corpus luteum effect does not bear any weight for or against granulosa cell tumor, since secretory endometrium has been found in patients with these tumors when no other source of progesterin could be demonstrated. Hormone studies of recent years have cast doubt on the concept that ovaries are endowed at birth with their full quota of primordial follicles and suggest that follicles may be developed from the ovarian stroma in extra-uterine life. The fact that the second patient had a secretory endometrium after so long a period of amenorrhea may be interpreted as evidence for the evolution of a new crop of primordial follicles. It does not seem at all likely that any follicles which might have survived irradiation would have remained inactive for so long a time. Only one biopsy of the endometrium was made from the first patient and it did not show any corpus luteum effect; therefore no deductions can be drawn as to whether follicles may have developed anew.

**Modified Measles and Immunity.**—In February 1926 Townsend gave thirty-two boarding school students 9 cc. of convalescent whole blood at least eight days before the development of the rash. They experienced distinctly milder symptoms than their confrères who were not so treated. Replies have recently been received from the thirty-two individuals. In no case have any of them experienced a subsequent attack of measles. Nine individuals indicated that they had, to their knowledge, come into intimate contact with the disease, some of them several times. Five others stated that they had been present in communities while measles epidemics had been in progress but did not know of direct contact. The others made no observations about possible exposures, but most of them

were in school or college for about six of the ten years, and probably had ample opportunity for exposure. There is no evidence to date that the active immunity conferred by modified measles is any less satisfactory than that conferred by the unmodified disease.

### Psychiatric Quarterly, Albany, N. Y.

10: 193-360 (April) 1936

- Place of Psychiatry in Criminal Law. W. Overholser, Boston.—p. 197.  
Trends in Psychiatric Research. C. O. Cheney, New York.—p. 224.  
Some Psychiatric Aspects of Marijuana Intoxication. P. H. Drewry, White Plains, N. Y.—p. 232.  
Complement Fixation Test for Syphilis Applied to Oxalated Blood. H. S. Gregory, Binghamton, N. Y.—p. 243.  
Marital Status in Relation to Prevalence of Mental Disease. B. Malzberg, Albany, N. Y.—p. 245.  
Psychology of Manic Phase of Manic-Depressive Psychoses. J. R. Blalock, New York.—p. 262.

### Public Health Reports, Washington, D. C.

51: 363-410 (April 3) 1936

- Changes in Incidence and Fatality of Smallpox in Recent Decades. A. W. Hedrich.—p. 363.  
Acute Response of Guinea-Pigs to Vapors of Some New Commercial Organic Compounds: IX. Pentanone (Methyl Propyl Ketone). W. P. Yant, F. A. Patty and H. H. Schrenk.—p. 392.

### Southern Medical Journal, Birmingham, Ala.

29: 339-444 (April) 1936

- Carcinoma of Rectum and Colon. D. F. Jones, Boston.—p. 339.  
\*Abdominal Lymphoblastoma and Its Treatment by Irradiation. A. U. Desjardins and C. H. Watkins, Rochester, Minn.—p. 344.  
Gastro-Intestinal Malignancies: X-Ray Findings. J. T. McKinney, Roanoke, Va.—p. 351.  
Monocytic Leukemia Cutis: Report of Case with Biopsy Studies. A. B. Loveman, Louisville, Ky.—p. 357.  
Low Back Injuries, with Particular Reference to Part Played by Congenital Abnormalities. F. D. Dickson, Kansas City, Mo.—p. 364.  
Bone Syphilis. J. S. Speed and H. B. Boyd, Memphis, Tenn.—p. 371.  
Ectropion: Problem for Eye Surgeons. J. M. Wheeler, New York.—p. 377.  
Some Sinus Conditions with Unique Symptoms. T. W. Moore, Huntington, W. Va.—p. 382.  
\*Some Biochemical Factors of Heart Failure. G. Herrmann, G. M. Decherd Jr. and E. H. Schwab, Galveston, Texas.—p. 386.  
Pathogenesis of Circulatory Failure. T. R. Harrison, Nashville, Tenn.—p. 394.  
Disorders of Heart Beat and Cardiac Failure. F. N. Wilson, Ann Arbor, Mich.—p. 397.  
Treatment of Congestive Heart Failure. J. E. Paullin and W. R. Minnich, Atlanta, Ga.—p. 400.  
Cardiac Neuroses. W. R. Houston, Austin, Texas.—p. 404.  
Evaluation of Relative Role of Fungi (Trichophyton) and Other Allergens in Patients with Allergic Dermatoses. Edna S. Pennington, Nashville, Tenn.—p. 407.  
Intravenous Testing in Postarsphenamine Dermatitis. H. M. Robinson, Baltimore.—p. 411.  
Favorable Influence of Adequate (Higher) Carbohydrate Diets on Blood Pressure of Diabetic Patients. W. D. Sansum, Santa Barbara, Calif.—p. 414.  
Some Observations on Anemia of Pregnancy. E. D. Plass, Iowa City.—p. 417.  
Medical Supervision of Summer Camps. W. L. Funkhouser, Atlanta, Ga.—p. 422.  
Tuberculosis as Public Health Problem Today. A. E. Russell, Washington, D. C.—p. 428.  
Francis Adams of Banchoy. L. J. Moorman, Oklahoma City.—p. 435.

**Abdominal Lymphoblastoma and Its Treatment by Irradiation.**—Desjardins and Watkins point out that many physicians have the impression that the manifestations of Hodgkin's disease and lymphosarcoma, especially the enlargement of lymph nodes, always begin in the neck and thence extend to the mediastinum, axilla, abdomen and groin. This is often true, but in some cases the disease first affects the abdominal, mediastinal or inguinal nodes and later spreads to other groups of nodes. Enlargement of retroperitoneal nodes, especially those around the celiac axis, as the earliest manifestation of the disease, is much more common than is generally realized. But even when the disease begins in the neck, axilla or mediastinum it tends to invade the retroperitoneal nodes sooner or later. The presence of Hodgkin's disease or lymphosarcoma in the retroperitoneal nodes usually is accompanied by more or less telltale symptoms. Pain is not a common complaint. Abdominal discomfort may be associated with nausea and irregularly with vomiting, or increasing constipation with

an increasing tendency to distention with gas, or both. The patient may complain of pain in the back on one or both sides, and the pain may extend to one or both hips and sometimes down one or both lower extremities. Sometimes pain in a lower extremity may be accompanied by edema attributable to enlargement of the iliac and inguinal nodes; when this occurs, it is usually in association with involvement of the retroperitoneal nodes. By themselves these symptoms are not conclusive; the most significant feature is their slow, gradual increase. Two symptoms, which are of great diagnostic importance when present but which are lacking in many cases, are fever and pruritus. Concerning the technic of irradiation for lymphoblastoma, some divergence of opinion still exists. Impressed by the immediate recession of lymphadenopathy when the affected regions are exposed to rays generated at 200 peak kilovolts, some physicians are not aware that equal or better results may be obtained with rays generated at 135 peak kilovolts and filtered through 4 or 6 mm. of aluminum, according to the situation of the nodes. Since the disease tends to extend from one group of nodes to another regardless of the technic of irradiation, it is wise to adopt a technic that can be repeated at intervals for an indefinite period. Maximal doses are to be avoided because of the danger of inducing cutaneous or other changes which may shortly prevent subsequent treatment. In lymphoblastoma and certain other neoplastic processes in which it is essential to include all the lymph nodes from the diaphragm down to and including the groin, this can be accomplished much more effectively by dividing the anterior aspect of the abdomen (from xiphoid cartilage to groin) into four fields with the navel as a center, and by dividing the posterior aspect into four additional and corresponding fields. The several beams of rays should be made to converge toward the median line, where most of the nodes are situated. Thus, not only are the abdomen and its contents more uniformly irradiated, but the effect of many converging beams of rays on the lymphoblastomatous process and its clinical manifestations is much greater than when only one anterior and one posterior field are exposed. In women who still menstruate irradiation of the pelvis should be avoided, unless marked lymphoblastomatous infiltration of the iliac nodes or of some of the pelvic structures should force the physician to disregard menstrual function. Not only the obviously affected regions but all the more important groups of lymph nodes should be systematically irradiated. The treatment should be repeated at regular intervals of three or four weeks (unless pronounced leukopenia should prevent) until the lymphadenopathy has disappeared or until maximal regression of the enlarged nodes has been obtained. Even after apparently complete regression of the nodes, it is wise to give at least one more course of treatment. Only thus may prolonged arrest of the disease and improvement in the condition of many patients be expected.

**Some Biochemical Factors of Heart Failure.**—In addition to the chemical studies of human heart muscle, Herrmann and his associates have carried out various experimental procedures on several series of mammalian hearts and then analyzed the muscle. The total creatine content has been the object of most of their chemical analyses. The clinical experimental biochemical facts seem to point the way toward the ultimate solution of the problem of myocardial weakness or heart failure. The most logical deduction from the mass of data concerning the physical mechanism of heart failure and ten years of clinical and experimental work led Harrison to the conclusion that the chief factor in heart failure is anoxemia, an actual reduction of the diffusion of oxygen into the heart muscle cell. The thickened heart muscle cell of compensatory hypertrophy in itself impedes oxygen diffusion; the arteriolar and arterial sclerosis add some further barrier to maximal and adequate oxygenation. These factors alone lead to an anoxemia of heart muscle, and this in turn may initiate a train of chemical changes that further impair the functional capacity of the heart. The effect of inadequate cellular oxygen supply on cellular metabolism is that the synthesis of muscle glycogen is interfered with, the lactic acid that results from glycogen breakdown during contraction is not completely resynthesized and accumulates, and an acidosis results as the organic acid uses up the buffers of the blood. The phosphocreatine breakdown to creatine and phosphate liberates the energy of contrac-

tion even under anaerobic conditions, but the fairly constant relationship of aerobiosis is lost and the phosphocreatine disappears more rapidly than the glycogen, and the ratio falls. The increasing  $p_{H}$  likewise speeds up the velocity of phosphocreatine hydrolysis, and this may well hold the concentration at a low level and interfere with resynthesis and thus contribute to myocardial weakness. The potassium ion of the creatine phosphoric acid secondary salt may be lost under the conditions of anoxemia. The resynthesis of the phosphocreatine after the contraction apparently depends on the energy liberated by the delayed lactic acid formation. Some lactic acid is oxidized to carbon dioxide and water, but in anoxemia there is a rapid accumulation of lactic acid in the tissues and the blood, and the mammalian heart does not tolerate any concentration above 0.07 Gm. per hundred cubic centimeters without showing signs of exhaustion. The analysis of such exhausted hearts shows striking losses in total creatine content. It is therefore reasonable, in view of the facts known about the relation of phosphocreatine to cardiac energy, to consider heart failure a matter of disturbed glycogen-phosphocreatine metabolism.

### Southwestern Medicine, Phoenix, Ariz.

20: 123-160 (April) 1936

- Urinary Lithiasis. H. C. Bumpus Jr., Pasadena, Calif.—p. 123.  
Congenital Valve of Posterior Urethra: Case Report. A. W. Multhaupt, El Paso, Texas.—p. 125.  
Treatment of Congestive Heart Failure. C. T. Stone, Galveston, Texas.—p. 126.  
Diverticulum of Third Portion of Duodenum: Case Report. W. Smith, introduction by W. W. Watkins, Phoenix, Ariz.—p. 130.  
Submucous Fibroids. L. Green, El Paso, Texas.—p. 132.  
I. Rickets and Scurvy in Well-Nourished Child: Case Report: II. Imperforate Esophagus: Case Report. C. P. Harris, El Paso, Texas.—p. 133.  
Studies on Nature of Phagocytosis. Z. M. Flinn, Prescott, Ariz.—p. 134.  
Medicine and Men: Discussion of Compulsory Sickness Insurance. F. E. Sondern, New York.—p. 137.

### United States Naval Med. Bulletin, Washington, D. C.

34: 149-284 (April) 1936

- Drunkenness: Naval Medicolegal Aspects of Diagnosis. W. W. Hall.—p. 149.  
\*Dentin Desensitization. L. L. Hartman.—p. 163.  
Treatment of Acute Mechanical Intestinal Obstruction. M. D. Willcutts.—p. 163.  
Fracture of Carpal Scaphoid. F. R. Hook and J. D. Boone.—p. 172.  
Study of Diet in Relation to Dental Caries Activity in Two Hundred and Twelve Enlisted Men at the Pearl Harbor, Submarine Base, Hawaii. Martha R. Jones and G. N. Crosland.—p. 181.  
Differential Diagnosis of Coronary Artery Disease. E. A. Stephens.—p. 199.  
Transportation of Insane Patients from Mare Island, Calif., to Washington, D. C. Alma C. Smith and A. S. Chrisman.—p. 204.  
Blood Transfusion: Modification of Existing Devices. J. E. Reeves.—p. 210.  
Studies of Active Pneumococcus Immunity: IV. Duration of Types I and II Pneumococcus Immunity. D. Ferguson.—p. 213.  
Breathing Resistance of New Submarine Escape Apparatus Compared with That of Previous Models. R. A. Hansen, A. R. Behnke and C. W. Shilling.—p. 220.  
Some Aspects of Treatment of Neurosyphilis in Navy. L. E. McDonald.—p. 224.  
Gonorrheal Infections in Samoa. B. Hollander.—p. 235.

**Dentin Desensitization.**—The painful reaction of dentin to denturing procedures led Hartman to believe that it was probably due to the presence of lipoids in this tissue. Working on this assumption, he prepared a solution containing the lipoid solvents, alcohol and ether, and thymol, a substance soluble in lipoids. The formula (one and one-fourth parts of thymol, one part of 95 per cent ethyl alcohol and two parts of sulfuric ether) has been found effective in relieving pain during operations on dentin. The solution should be kept in a tightly corked brown glass bottle. Half an ounce of the solution is sufficient for 200 applications. Only cork or tin lined stoppers should be used. It is applied topically. The cavity is packed with dry cotton and a pellet of cotton is moistened in the liquid and held in contact with the cotton in the cavity for one minute in children and one and one-half minutes in adults. Both pellets are removed. Warm air is used to leave a film of thymol on the surface of the cavity. If applied over caries, a second application may be necessary after the caries has been removed.

### Virginia Medical Monthly, Richmond

63: 1-64 (April) 1936

- Surgical Treatment of Ulcerative Colitis. H. H. Trout, Roanoke.—p. 1.  
Results of Roentgen Treatment of Some Very Advanced Malignancies. F. M. Hodges, Richmond.—p. 5.  
Some Observations on Surgical Treatment of Pulmonary Tuberculosis. W. E. Brown and F. B. Stafford, Charlottesville.—p. 10.  
Salient Points in Emergency Surgery. M. H. Todd, Norfolk.—p. 15.  
Immediate Care of Perforations of Globe: Observations in Seventy-Two Cases. E. G. Gill, Roanoke.—p. 26.  
Supposed Analogy Between Hyperthyroidism and Peptic Ulcer. E. T. Trice, Richmond.—p. 27.  
Unusual Indications for Cesarean Section. C. J. Andrews and R. B. Nicholls, Norfolk.—p. 33.  
Tetanus: Group Case Study. N. Bloom, Richmond.—p. 38.  
Detailed Study of One Hundred Consecutive Cases of Allergy as Evidenced by Asthma and Hay Fever. K. D. Graves, Roanoke.—p. 42.

### Western J. Surg., Obst. & Gynecology, Portland, Ore.

44: 199-254 (April) 1936

- Gonadotropic Hormones. H. Evans, Berkeley, Calif.—p. 199.  
Progress in Neurosurgery During the Past Twenty-Five Years. G. W. Swift, Seattle.—p. 209.  
Achievements in Surgical Treatment of Lesions of Stomach and Duodenum During the Past Twenty-Five Years. V. C. Hunt, Los Angeles.—p. 218.  
Modified Method of Billroth I Stomach Resection. M. E. Steinberg, Portland, Ore.—p. 222.  
Advantages of Sodium Evipal as an Anesthetic Agent. F. M. Findlay, Santa Barbara, Calif.—p. 225.  
\*Diphtherial Infection of Scirrhus Carcinoma. W. Marshall, C. D. Neidhold and V. F. Marshall, Appleton, Wis.—p. 230.

**Diphtherial Infection of Scirrhus Carcinoma.**—Marshall and his associates report the case of a woman, aged 57, who noticed that the nipple of the left breast began to harden about one and a half years before. She stated that the area of the breast just superior to this nipple "turned in" and formed a "pimple" which did not open for a period of three or four months. It finally opened during January 1934. Since that time it had been draining slightly. The discharge was serous in type. There never had been any pain connected with the lesion. However, it did itch. A smear was taken from the sinus and a culture was made. The examination suggested a "diphtheroid" type of organism. A guinea-pig was inoculated with a culture and died within forty-eight hours. The necropsy revealed hemorrhages into the adrenals. The technician obtained a pure culture from a Loeffler's slant. These bacteria were gram-positive and were beaded and exhibited clubbed ends. Furthermore, they exhibited the peculiar palisade arrangement or "hen's tracks." The necropsy observations of the injected guinea-pig were typically those caused by the Klebs-Loeffler bacilli. Several days later, cultures were taken from the patient's nose and throat. They did not exhibit this type of organism. Repeated cultures of the nose and throat gave the same results. The intracutaneous tuberculin test was positive within twenty-four hours. The control on the opposite arm was negative. The Schick test was negative, as was the control. The diagnosis was scirrhus carcinoma of the breast with secondary infection. The entire left breast was removed by the Willy-Meyer technic. It was atrophic and had very little glandular tissue remaining. There were some lipid strands in the sclerosed tissue of the breast. The skin was heavily infiltrated with scirrhus carcinoma, and under examination exhibited the typical "pigskin" appearance. The axillary glands contained metastatic tumor growths, and cancerous proliferations were noted in the axillary regions and involved the underlying musculature and blood vessels. The pathologic diagnosis was scirrhus carcinoma of the breast with metastases to the lymph glands. As the patient improved from the operation, three doses of roentgen therapy, totaling 1,300 roentgen units, were given the left chest and neck regions. Some days later the area on the left breast, which was without skin, was covered with skin transplants (Thiersch grafts). These grafts grew well. In the course of about two weeks the patient was discharged from the hospital. However, a few months later, she began to experience symptoms which pointed to metastases to the brain and the skeletal system and she died within a period of six months. The patient may have been a carrier of the Klebs-Loeffler organism or she may have inoculated her breast with the pathogen.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

**British Journal of Dermatology and Syphilis, London**

48: 113-172 (March) 1936

The X-Ray Epilation of the Scalp. H. T. Schreus and A. Proppe.—p. 113.

Etiology of Erythema Nodosum. L. Forman.—p. 123.

Gold Dermatitis with Hyperkeratosis: Case. A. C. Roxburgh, A. P. M. Page and D. Gordon.—p. 137.

**British Journal of Radiology, London**

9: 143-214 (March) 1936

Ventriculography. M. H. Jupe.—p. 147.

\*Protection of Radium Workers from Gamma Radiation: Protection Afforded by Building Materials. G. W. C. Kaye, G. E. Bell and W. Binks.—p. 161.

Fungoid Conditions of the Lung: Part I. R. Fawcitt.—p. 172.

Present Position of Treatment in Carcinoma of Cervix Uteri. T. F. Todd.—p. 196.

Neck of Femur from Lateral Aspect. C. E. Gaitskill.—p. 205.

**Protection from Gamma Radiation Afforded by Building Materials.**—Kaye and his co-workers deal with the part which building materials can play in providing protection against gamma rays for workers and others in the vicinity of radium bombs. Transmission measurements were conducted with narrow beams and with wider beams under everyday conditions, in which the influence of scattered radiation is almost always pronounced. The materials tested were full-scale walls of brickwork from 4 to 23 inches thick and solid steel doors up to 3½ inches thick, as well as smaller specimens of lead, iron, aluminum, brick, coke breeze and concrete of various thicknesses. Up to several grams of radium was used as a source of radiation, and the transmission measurements were made by means of thick air-walled ionization chambers, so as to simulate the conditions relating to deep seated tissue. It is customary to regard the absorption of gamma rays by different materials as proportional to their densities, but the present results show that, while the relationship is sufficiently exact for the lighter elements, it requires correction when comparing light and heavy elements, owing to photo-electric absorption in the latter. Protective values are commonly quoted in terms of lead, but when these are translated into terms of building materials, by the aid of the density law, the thicknesses so derived should be increased by up to about 50 per cent for the radium beam from a typical present-day bomb.

**British Journal of Urology, London**

8: 1-104 (March) 1936

Traumatism of Kidney: Report of Twenty-Seven Cases: Experimental and Clinical Study. W. C. Stirling.—p. 1.

Polycystic and "Unilateral" Polycystic Kidney: Review of Literature and Two Cases, One with Intracystic Papilloma. C. Wells.—p. 22.

\*Relation of Parathyroid Glands to Urinary Lithiasis. J. D. Barney and E. R. Mintz.—p. 36.

Treatment of Prostatic Hypertrophy with Male Hormone (Hombreol). D. Van Cappellen.—p. 45.

**Relation of Parathyroids to Urinary Lithiasis.**—Among 340 patients with urinary lithiasis, Barney and Mintz discovered twelve cases, 4.16 per cent, of hyperparathyroidism proved by operation. Several other cases in which the observations were suggestive may be so affected. They believe that the studies being made of parathyroid disease in its relation to urinary stone may lead eventually to the solution of a great problem. The study of the subject of urinary lithiasis, whether due to hyperparathyroidism or to other causes, is not to be considered ended with the removal of the parathyroid tumor, of the stone or of both. There should be frequent follow up of the patients. A careful dietary regimen should be laid out; blood and urine chemistry should be frequently investigated; the urine should be kept strongly acid, preferably with ammonium chloride, and roentgenograms of the urinary tract should be taken from time to time. Only then will it be possible to put these investigations on a foundation of certainty. While hyperparathyroidism is responsible for between 4 and 5 per cent of all cases of urinary stone, the proportion of stones in the presence of this disease may be almost 70 per cent. Patients may show patho-

logic changes of bone and the urinary tract in about 38 per cent of cases of hyperparathyroidism. This disease does not seem to be a factor in the production of bilateral lithiasis. The symptoms and signs of urinary lithiasis in parathyroid tumors do not differ from those due to other causes.

**British Medical Journal, London**

1: 401-456 (Feb. 29) 1936

Recent Advances in Radium Therapy. H. S. Souttar.—p. 401.

Mycotic Infections and Their Treatment. J. C. Belisario.—p. 404.

Some Toxemias of Animals Due to Anaerobic Organisms: Comparative Pathologic Study of Recent Work, with Particular Reference to Toxemia of Intestinal Obstruction in Man. H. A. Woodruff.—p. 406.

Chronic Rheumatism. R. F. Fox.—p. 409.

Malignant Endocarditis Due to Brucella Abortus. J. K. Rennie and C. J. Young.—p. 412.

Belladonna Poisoning by Liquid Extract of Liver. N. F. Winder and C. H. Manley.—p. 413.

**East African Medical Journal, Nairobi**

12: 325-356 (Feb.) 1936

Inquiry into Correlation of Civilization and Mental Disorder in the Kenya Native. H. L. Gordon.—p. 327.

Cinchona Alkaloids in Treatment of Malaria: Notes. R. Mackay.—p. 336.

\*Cod Liver Oil Treatment of Wounds. J. H. Tennent.—p. 341.

Bug Proof Construction of Native Dwellings. F. Walker and D. S. Dixon.—p. 344.

Congenital Relapsing Fever: Case. H. G. Calwell.—p. 347.

**Cod Liver Oil Treatment of Wounds.**—Tennent has used cod liver oil in the treatment of a varied series of wounds. The method is comparatively painless; it is efficient, results in a great reduction in the number of dressings required, and is simple and cheap. The one disadvantage is the characteristic odor, but in none of the author's cases has the odor been an insuperable difficulty. He briefly refers to three of his most striking cases: a severe burn, an accidentally opened knee joint and a wound from a charge of shot at close range in the right buttock. Treatment with cod liver oil has given most gratifying results, confirming those of Steel.

**Edinburgh Medical Journal**

43: 125-216 (March) 1936

Series of Nephrectomies for Tuberculosis: Notes. R. C. Alexander.—p. 127.

Inoculation Tuberculosis: Report of Unusual Case. J. Anderson.—p. 132.

Some Points in Histologic Diagnosis of Tuberculosis. D. F. Cappell.—p. 134.

Avian Type Tubercle Bacillus: Its Characteristics, Cultural and Pathogenic, with Demonstration of Natural Disease Produced by Bacillus. W. J. Tulloch.—p. 144.

Role of BCG in Vaccination of Cattle Against Tuberculosis. J. B. Buxton.—p. 160.

Practical Application of BCG Vaccine in Prophylaxis of Tuberculous Infection in Children. E. Rist.—p. 172.

Experimental Study on Allergy and Immunity. D. G. S. M'Lachlan.—p. 185.

Id.: Preliminary Report of Early Observations. C. Clayson.—p. 185.

Lupus Vulgaris, with Especial Reference to Its Treatment with Finsen-Lomholt Lamp. R. Aitken.—p. 194.

**Indian Medical Gazette, Calcutta**

71: 61-120 (Feb.) 1936

\*Bacteriophage in Treatment of Cholera. C. L. Pasricha, A. J. H. de Monte and E. G. O'Flynn.—p. 61.

Against Orthodoxies in Rabies. S. D. S. Greval.—p. 69.

Epithelioma Adenoides Cysticum: Reports of Three Cases. A. N. Goyle, K. G. Krishnaswami and A. Vasudevan.—p. 74.

Petit Mal or Pyknolespy. J. N. Pacheco.—p. 77.

Practical Way of Dealing with Aedes Aegypti (Stegomyia Fasciata) Mosquito Breeding in Country Craft. F. D. Bana.—p. 79.

Unusual Source of Contamination of Well Water: Note. T. N. S. Raghavachari.—p. 80.

**Bacteriophage in Treatment of Cholera.**—Of 1,369 patients with cholera admitted during the year ended July 1935, Pasricha and his associates treated 684 with cholera-phage, while 685 received the usual hospital treatment. The selection was made by taking alternate admissions into the wards, irrespective of age, severity and general condition of the patient. Both series received the usual hospital routine treatment for cholera, and the phage-treated patients received in addition cholera-phage in doses of 2 cc. every four hours. The only medication given orally was in the form of divided doses of mercury bichloride. Every patient was examined bacteriologically on the day of admission. Later, examinations were made at least once in every twenty-four hours, up to the complete dis-

appearance of symptoms, and when possible a certain number of cases were followed up after discharge from the hospital. Special efforts were made to examine repeatedly cases clinically positive but bacteriologically negative. Choleraphage used for treatment was prepared on freshly isolated agglutinable strains and constantly "refreshed" on recently isolated vibrios. Freshly isolated potent phages were frequently added to the "seed phages" and every effort was made to ensure the presence of a larger number of types of choleraphage in each brew. The only criterion of the results of treatment employed has been recovery or death. The gross mortality is less, though not statistically significant, in the cases treated with choleraphage. The difference in the mortality rates between the series is more marked during the period when the cases treated with choleraphage were in a separate ward. In cases of clinical cholera in which vibrios were isolated, bacteriophage is of definite therapeutic value. Of the total number of 398 patients with cholera passing vibrios in the series treated with the choleraphage, agglutinable vibrios were found in 337 cases, or approximately 85 per cent. The mortality in this group was 8.3 per cent. Of the 443 patients in the series not treated with the choleraphage, 369, or 83 per cent, were found to pass agglutinable vibrios. The mortality in this group was 20.6 per cent. The results in this group are statistically significant. Choleraphage gave unfavorable results in the cases in which, in spite of repeated search, only inagglutinable vibrios were found. The mortality in this group (sixty-one cases) was 8.2 per cent, as compared with 4.7 per cent in the control series (seventy-four cases). No satisfactory explanation can be advanced for this failure. However, the choleraphage used in the experiment had been propagated only on agglutinable vibrios. The effect of bacteriophage prepared on inagglutinable vibrios, or a therapeutic bacteriophage prepared on both agglutinable and inagglutinable vibrios of a particular epidemic, still remains to be determined. There is an appreciable difference in the treated and control series of cases. The patients are less toxic, there is less dehydration, and fewer injections of sodium chloride solution are required in the treated series than in the controls; also the patients are discharged sooner, secrete vibrios for a smaller number of days and in general have a clinically milder course. Uremia and other complications are often averted, or, if they supervene, are milder in the treated series.

### International Journal of Psycho-Analysis, London

17:1142 (Jan) 1936

- A Note on Suicide Melitta Schmideberg—p. 1.  
Purposive Accidents as an Expression of Self Destructive Tendencies K. A. Menninger—p. 6.  
Infantile Ideals M. N. Searl—p. 17.  
Dominant Ideas and Their Relation to Morbid Cravings Therese Benedek—p. 40.  
Psychology of the Festival of Christmas L. Jekels—p. 57.  
Unconscious Significance of Hair C. Berg—p. 73.  
The Problem of Freedom in Psychoanalysis and the Problem of Reality Testing. R. Wälder.—p. 89.

### Irish Journal of Medical Science, Dublin

No. 122:49-96 (Feb.) 1936

- The Commonwealth of Medicine: Yesterday W. R. Fearon—p. 49.  
\*Generalized Osteitis Fibrosa Cystica W. J. E. Jessop—p. 59.

**Generalized Cystic Fibrotic Osteitis.**—Jessop says that in generalized cystic fibrotic osteitis there is hyperactivity of the parathyroids associated with hyperplasia and resulting in the production of excessive secretion. Under the influence of this excess parathyroid hormone calcium salts are mobilized from the bones, which consequently suffer loss in strength as shown by deformity and spontaneous fracture. There is lack of density in the shadows with localized cyst formation. The bone is replaced by fibrous tissue. There is considerable osteoporosis, and the arrangement of the osteoclasts and osteoblasts affords evidence of absorption and new bone formation. These two processes often proceed in an irregular manner and the new bone rarely shows a normal arrangement in haversian systems. The amount of calcium in the blood increases and there is increased excretion of calcium salts, especially in the urine. The necessity for maintaining osmotic equilibrium in the kidney leads to polyuria, which is accompanied by thirst. The effort on the part of the organism to bring about a com-

pensatory increase in new bone formation leads to an increase of the concentration of phosphatase in the plasma. The concentration of calcium in the plasma is known to control the tone and excitability of muscle. In parathyroid tetany the diminished blood calcium is accompanied by increased muscle tone and muscular hyperexcitability, and a return to normal follows intravenous injection of calcium chloride in sufficient quantity to restore the blood calcium to normal level. Similarly, continued injection of parathyroid extract produces an increase in blood calcium and a state of diminished tone and excitability in muscle. The increased blood calcium in cases of parathyroid tumor (generalized fibrotic osteitis) is frequently accompanied by like muscular changes, which are corrected by the removal of the (parathyroid) tumor. Certain other clinical features are of interest. The disease is most common in women between the ages of 30 and 60 years and is often accompanied by weakness and loss of weight and a hypochromic anemia. During the course of the disease there is often much pain and tenderness in the bones or joints. Pronounced changes are found in the skull, which becomes enlarged, with prominence of the forehead. The total number of cases at present recorded is variously estimated at between fifty and 100, but the higher figure probably includes many in which the parathyroid enlargement was found post mortem and others in which slightly enlarged or normal parathyroids were removed from atypical cases.

### Journal of Hygiene, London

36:1-128 (Feb.) 1936

- Measurement of Airway of Nose and Nose Opening Rays. L. Hall—p. 1.  
Radiologic Demonstration of Bronchial Constriction in Acute Anaphylaxis in Guinea Pig R. Williamson—p. 11.  
\*Iron in Human Nutrition. E. M. Widdowson and R. A. McCance—p. 13.  
Stock Diet for Rats W. Thomson—p. 24.  
\*Antistreptolysin Titers of Human Serum in Health and in Various Streptococcal Infections. R. D. Stuart—p. 26.  
Resistance of Four Mouse Lines to Bacterial Infection H. Schütz, P. A. Gorer and M. H. Finlayson—p. 37.  
Application of Principle of Eijkman's Fermentation Test for Determining Coli Titer of Water J. E. Minkevich, N. J. Alexandrov and E. J. Soboleva—p. 50.  
Comparative Investigation of Bulh's Fermentation Test at 43 C and Standard American Test at 37 C. J. E. Minkevich, F. S. Joffe and A. J. Shafrir—p. 64.  
Silicosis in Sand Blasters. Examination of Sands Associated with Sand Blasting F. S. Fowweather.—p. 67.  
Relation Between Health and Intelligence in School Children. N. J. England—p. 74.  
Trend of Cancer Mortality in Australia J. H. L. Cumpston—p. 95.  
Contribution to the Problem of Virulence (VI) Antigen of Bacillus Typhosus S. S. Dyachenko—p. 108.  
Biochemical Reactions of Vibrios B. Heiberg—p. 114.  
Two Serologically Different Groups Among True Cholera Vibrios B. Heiberg—p. 118.  
Pathogenicity of Tanganyika Strains of Brucella Abortus and Brucella Melitensis for Local Species of Monkey (Cercopithecus Sp.). D. E. Wilson—p. 125.

**Iron in Nutrition.**—Widdowson and McCance assessed the total and "available" iron intakes of sixty-three men and sixty-three women of the English middle class, whose ages ranged from 18 to 90 years and who were living on freely chosen diets with no restrictions due to income or other cause. Their occupations were sedentary or moderately active; a few manual laborers were included. The mean intake of total iron for the men was 168 mg. a day; however, 37 per cent of the men were consuming a diet containing less than 15 mg. a day, and the minimum (78 mg.) was little more than half. The average intake of total iron for the women was 11.4 mg. a day, and 30 per cent of the women were taking less than 10 mg. of iron daily. The chief source of iron in the English diet is meat. The available iron intake for men had a mean value of 10.8 mg. a day. The corresponding figure for women was 7.9 mg. This higher percentage of total iron taken in an available form by the women is due to their lower intake of meat, which contains much total iron but relatively little available iron. Hemoglobin determinations were made on forty-two of the men and twenty-nine of the women. Mean values of 102 per cent for men and 93 per cent for women were obtained. These results must be considered to be within the normal range (Price-Jones, 1931). No correlation could be found among the women between the total or available iron intake and the percentage of hemoglobin in the blood. For the men the correlation was not significant for the total iron but was



just significant for the available iron. This does not prove that the intake of iron is not a factor in regulating the level of hemoglobin in the blood. It merely shows that under these conditions other factors involving absorption, excretion and menstrual loss predominate. The lower percentage of hemoglobin in women's blood must be due either to some physiologic cause or to the fact that their iron intake is insufficient for their requirements. A dietary cause should be sought for the lower hemoglobin levels in women. The effect of large doses of iron (100 mg. of iron a day as ferrous sulfate or ferric ammonium citrate) on normal hemoglobin levels scarcely altered the hemoglobin percentages of men but has increased the values for women by from 4 to 17 per cent, and a mean rise of more than 10 per cent has been observed.

**Antistreptolysin Titers of Serum in Health and Infection.**—Stuart compared streptolysin production by twenty-seven strains of hemolytic streptococci grown in a special buffered dextrose serum-free broth and observed a marked variation. The antistreptolysin titers in healthy individuals and in others at the commencement of illness showed a pronounced variation. Throat infections with *Streptococcus haemolyticus* usually produced a rise in the level of circulating antistreptolysin in the patients' blood, and this could be considered diagnostically significant. Throat infections with hemolytic streptococci showed rather more rapid production and higher titers of antistreptolysin than did skin infections, such as erysipelas, and both throat and skin infections were greatly superior to uterine infections in this respect. Neither the level of circulating antistreptolysin at the commencement of infection nor the rate and height of response could be shown to have any bearing on the severity of the disease, except that a poor antistreptolysin response was found in certain cases of relapses and toxic complications of throat infections. This appeared, however, to be merely indicative of a general poor antitoxic response and not to have any meaning by itself, except in certain arthritic cases in which the question of its importance was more open. No correlation was noted between antistreptolysin response and relapses and septic complications in erysipelas. In general the antistreptolysin response in infection appeared to depend more on the individual than on the site or severity of infection.

### Journal of Physiology, London

86: 229-336 (March 9) 1936

- Some Factors Influencing Survival of Rats After Adrenalectomy and Suitability of the Young Rat for Testing Potency of Adrenal Cortical Extracts. R. A. Cleghorn, S. M. M. Cleghorn, M. G. Forster and G. A. McVicar.—p. 229.
- Effect of Pregnancy and Pseudopregnancy on Blood Lipoids of Rabbits. E. M. Boyd.—p. 250.
- Potassium Changes in Stimulated Superior Cervical Ganglion. Marthe Vogt.—p. 258.
- Respiration and Venae Cavae: Further X-Ray Cinematographic Studies. K. J. Franklin and R. Janker.—p. 264.
- Transmission Through a Lumbar Sympathetic Ganglion. S. Obrador and J. B. Odoriz.—p. 269.
- Acetylcholine Content of Cerebrospinal Fluid of Dogs. W. Feldberg and H. Schriever.—p. 277.
- Response of Medullated Nerve to Alternating High Frequency Stimulation. B. Katz.—p. 285.
- Action of Potassium on Superior Cervical Ganglion of the Cat. G. L. Brown and W. Feldberg.—p. 290.
- Liberation of Acetylcholine by Potassium. W. Feldberg and J. A. Guimarães.—p. 306.
- \*Effect of Diets Low in Choline. C. H. Best, M. Elinor Huntsman Mawson, E. W. McHenry and Jessie H. Ridout.—p. 315.
- Gonadotropic Activity of Pituitaries of Vitamin E Deficient Rats. I. W. Rowlands and E. Singer.—p. 323.
- Occurrence of Ovulation and Pseudopregnancy in Rabbit as a Result of Central Nervous Stimulation. F. H. A. Marshall and E. B. Verney.—p. 327.

**Effect of Diets Low in Choline.**—Best and his co-workers give further evidence that diets low in choline and other lipotropic factors result in the deposition of large amounts of neutral fat in the livers of white rats. There is also a small increase in the cholesterol ester fraction. The accumulation of glyceride is greatest when there are large amounts of fat in the diet, but it is observed also when there is less than the usual amount. The addition of choline to the diet inhibits the deposition of fat in the liver and the minimal effective dose of the base is less than 3 mg. per rat daily. When diets rich in fat are provided, choline appears to exert a favorable effect

on the rate of gain in weight and general physical condition of the animals. The bearing of these results on the hypothesis that choline and other lipotropic factors are essential for certain liver functions is discussed.

### Lancet, London

1: 463-520 (Feb. 29) 1936

- Prophylactic Action of "Bayer 205" Against the Trypanosomes of Man: Concluding Observations. H. L. Duke.—p. 463.
- Antagonism Between Curarine and Prostigmine and Its Relation to the Myasthenia Problem. Grace Briscoe.—p. 469.
- \*Rôle of Ultraviolet Rays in Development of Cancer Provoked by the Sun. A. H. Roffo.—p. 472.
- Gonadotropic Hormones in Treatment of Sterility in Man. V. E. Lloyd.—p. 474.
- Three Arterial Embolectomies in the Same Patient, Including One in Each Femoral Artery. H. I. Deitch.—p. 475.
- Alcoholic Pseudoparesis: Case. E. W. Anderson.—p. 477.
- Jaundice Due to Phenobarbital. C. A. Birch.—p. 478.

**Rôle of Ultraviolet Rays in Development of Cancer.**—Roffo states that among 5,000 cancer patients attending the Cancer Institute of Buenos Aires none showed cancer of any part of the skin covered by clothing (except in two or three cases in which tumors developed on nevi or burn scars). The parts of the face most often affected are those most prominent and exposed: the nose, the cheek and hardly any on the forehead. It is also found that men are more receptive (70.9 per cent) than women (29.1 per cent), the lower incidence in women being related to the care they take of their skin, protecting it with powder. Sufferers from epithelioma are generally found to have very white (photosensitive) skins, and the author has not seen a single case in natives, Negroes or mulattoes. The hyperkeratosis that leads on to the epithelioma is dominated by a photodynamic mechanism, and for fulfilment of the process the following factors are necessary: the living cell, a sensitizing photodynamic substance, the presence of oxygen and the rays of the sun. Experiments have been undertaken by the author that confirm this view. In white rats he has obtained tumors of different histopathogenesis (epitheliomas and spindle cell sarcomas) in unprotected parts of the skin (ears and ocular conjunctiva). These tumors have developed under the influence of the total sun rays or under ultraviolet rays with a wavelength of from 1,800 to 3,400 angstroms. In animals, as in human beings, the skin is found to have an abnormally high cholesterol content before the development of the tumors. Exposure to the sun's rays was in itself sufficient to produce malignant tumors in 70 per cent of the rats. The process takes from seven to ten months, passing through hyperplasia and papillomatosis, and the carcinomatous and sarcomatous animals alike die in a state of cachexia with metastases in lymph glands. Experiments performed with different rays show that the power of the rays to produce tumors depends on their actinic and not on their luminous intensity. Histologically, the lesions obtained closely resemble those observed in persons with photosensitive skins who have been much exposed to the sun. The observations emphasize the danger of such exposure.

### Medical Journal of Australia, Sydney

1: 221-252 (Feb. 15) 1936

- Traumatic Lesions of Knee Joint. J. S. MacMahon.—p. 221.
- Internal Derangements of the Knee Joint. M. Callow.—p. 228.
- \*Neural Components of Teratomas. R. A. Willis.—p. 231.
- Papuan Field Experiment of Malaria Treatment. F. W. Clements.—p. 235.

**Neural Components of Teratomas.**—Willis discusses the possible functional significance of some of the neural elements in teratomas. The healthy appearance of many of the nerve cells in the ganglions, and less frequently in the central neural tissue of teratomas, suggests that they may have been capable of functioning. It is therefore pertinent to ask whether the nerves in these tumors may not sometimes effect functional connections with other tissues and so influence their differentiation and growth in ways comparable to those obtaining in normal ontogeny. The first step in attempting to establish this view would be to demonstrate the presence of effector nerve endings in muscle fibers and glandular epitheliums; and this has not yet been done. Finally, it is emphasized that the neural tissues found in teratomas do not form an organized nervous system. The tissues are scattered and entirely unana-

tomic in topography, neurons are scanty or absent in much of the neuroglial patches, and tracts of nerve fibers are absent; ependymal cavities are irregular in distribution and shape and are often disconnected and multiple, and peripheral nerve bundles are usually single and never grouped together to form large nerves. It is important to insist on these points, since many writers have reported that they have seen parts or the whole of a brain or spinal cord in teratomas. Structures so frequently present as masses of central neural tissue must necessarily assume, at times, shapes capable of fitting into almost any preconceived molds.

### Practitioner, London

136: 237-348 (March) 1936

- Leukemia: Differential Diagnosis and Treatment. H. L. Tidy.—p. 237.  
Status Thymicolympathicus. H. Cohen.—p. 252.  
Tuberculosis of Lymphatic Glands. E. P. Gould.—p. 262.  
Hodgkin's Disease and New Growths of Lymphatic Glands. W. G. A. Swan.—p. 273.  
Acute Lymphangitis and Acute Lymphadenitis. H. C. Edwards.—p. 281.  
Pains About the Head and Neck. W. Harris.—p. 289.  
Observations on Vertigo. S. Scott.—p. 302.  
The Medical Examination of Boat Race Crews. C. M. Billington.—p. 310.  
Ultimate Diagnosis of Anemia. G. E. Lewis.—p. 318.  
Nutritive Value of Clear Soups. W. F. Christie.—p. 321.  
Favorite Prescriptions: No. XV. Pharmacopoeia of St. George's Hospital. H. Gainsborough.—p. 327.

### Tubercle, London

17: 193-240 (Feb.) 1936

- Tuberculosis of Eye. R. E. Bickerton.—p. 193.  
\*Vitamin D in Experimental Tuberculosis of Guinea-Pigs. J. Zeyland and E. Piasecka-Zeyland.—p. 198.  
Some Indications for Paralysis of Diaphragm in Pneumothorax Treatment of Unilateral Pulmonary Tuberculosis. R. N. Tandon.—p. 203.  
Significance of Sedimentation Rate, Blood Index, Pulse and Blood Pressure in Prognosis of Pulmonary Tuberculosis. K. S. Sanjivi and K. V. Rao.—p. 205.  
Questionnaire on Complications Following Artificial Pneumothorax in Pulmonary Tuberculosis and Their Prevention by Collapse Therapy of Early Diagnosed Cases. F. Baum.—p. 212.

**Vitamin D in Experimental Tuberculosis.**—In order to determine the effect of small doses of vitamin D (corresponding to the doses used in clinical therapy) in the experimental tuberculosis of guinea-pigs, Zeyland and Piasecka-Zeyland performed experiments on two series of forty guinea-pigs of the same weight and age, infected subcutaneously with a dose of 0.05 mg. of bovine bacilli. In the first series of twenty guinea-pigs half of the animals after the infection received every second day one drop of a weak dilution of viosterol containing 25 international units; in the second series of twenty guinea-pigs half of the animals received every day two drops of a dilution of crystalline vitamin D containing 750 international units. By comparing the tuberculous involvement of treated and untreated animals it was possible to note a lack of convincing differences in both groups, with the exception of a slight and not essential prolongation of the life of the animals treated with vitamin D. Small doses of vitamin D corresponding to those used in the treatment of human beings, therefore, have no influence on the course of the experimental tuberculosis of guinea-pigs under the foregoing conditions.

17: 241-288 (March) 1936

- Industrialism and Tuberculosis. E. L. Middleton.—p. 241.  
Id. P. Heffernan.—p. 250.  
Liberation of Intrapleural Adhesions with Thoracoscope. O. M. Mistal.—p. 256.  
\*Electrical Anesthesia: Simple Curative and Symptomatic Treatment of Painful Dysphagia in Tuberculous Laryngitis. R. Grain.—p. 261.  
Morbid Histology of Pulmonary Abscess Cavity Walls. S. R. Gloyne.—p. 267.

**Electrical Anesthesia in Treatment of Dysphagia.**—Grain believes that electrical anesthesia has advantages over other therapeutic methods in the treatment of painful dysphagia in that it is simple in application, painless, harmless, never producing any local or general reaction, and giving positive results in from 98 to 99 per cent of cases of dysphagia. Electrical anesthesia, as used in the treatment of painful dysphagia, is a medical anesthesia that consists in eliminating in a localized territory the pain due to evolutive or avoluted lesions. These regional pains form the extensive class of peripheral algias. The electrical anesthesia has no appreciable

and durable effect on truncular algias. It must be considered the treatment of only the algias of the nerve endings, on which it acts with remarkable efficiency. The anesthesia is obtained by iodide ionization of the larynx encircled with special electrodes. The ionization current is produced by a galvanic apparatus with a fine reducing coil working on 45-volt dry batteries or on accumulators capable of giving at least 15 milliamperes. As the current must be rigorously continuous, these sources are the only ones that can be used. The electrodes are made of unoxidable steel with a thickness of 0.5 mm. The anterior electrode is 75 mm. long and 35 mm. wide and the posterior electrode 100 mm. long and 35 mm. wide. The anterior electrode is placed in front of the larynx, and the posterior electrode on the nape of the neck. They are kept in position by a collar made of isolating thick rubber. The intensity of the current to be used is uniformly of from 10 to 12 milliamperes; the sittings last half an hour, or longer if necessary. The sittings are repeated daily until the duration of the anesthesia reaches twenty-four hours, after which they are repeated only when the pain reappears. There is no advantage in giving daily sittings once the anesthesia lasts forty-eight hours, as its progression is not influenced by the repetition. As soon as the current passes, the patient notices a sensation of stricture in the neck, and at the same time he has a taste comparable to that of ink or of copper. The sensation is accompanied by a slight amount of ptialism. The sensation of stricture disappears in four or five minutes, while the metallic taste and the salivation persist during the treatment. Five or six minutes after the passage of the maximal current the patient notices a marked diminution of the pain on swallowing, which is reduced to a sensation of slightly disagreeable prickling, and at the same time the auricular irradiations disappear. After this beginning, the anesthesia increases rapidly and in about ten or fifteen minutes after the onset of the treatment it is absolute.

### Chinese Medical Journal, Peiping

50: 1-96 (Jan.) 1936

- Calcium and Phosphorus Metabolism in Osteomalacia: IV. Report of Unusual Case in Male with Acute Parathormone Poisoning. H. I. Chu, S. K. Chou, K. C. Chen, S. H. Wang, S. H. Liu and R. R. Hannon.—p. 1.  
\*Further Observations on Diagnosis of Amebic Dysentery. H.-C. Chang, K.-C. Ch'en and S.-K. Chou.—p. 17.  
Milk in Treatment of Gonoblenorrhoea. T. H. Luo.—p. 27.

**Diagnosis of Amebic Dysentery.**—Chang and his associates state that uncomplicated amebic dysentery is readily amenable to treatment. Drugs of recognized value seem to fulfil what has been claimed for them. But the success of treatment hinges entirely on an accurate diagnosis. For diagnosis, reliance has been heretofore placed entirely on the protozoological examination of the stool. In order to prevent error, even the most experienced protozoologists have insisted on a colossal number of examinations, which in actual practice is hardly practicable. To remedy this it is necessary to have a speedier and more accurate method of diagnosis to supplement, if not to replace, the fecal examinations. The authors believe that sigmoidoscopy admirably fills this need. The examination is simple and harmless and, with care, need not be unpleasant to the patient. By this method alone can one accurately observe the character of the lesion by direct vision, which in itself is often diagnostic. It ensures the most prompt detection of the causative ameba and thereby facilitates early treatment. It affords the best means of differentiation when the question of mixed infection or carrier state is at issue. It provides an accurate control of the treatment. The only drawback to sigmoidoscopic diagnosis is that in amebic dysentery theoretically the lesions may not be within the reach of the instrument. In amebic dysentery a number of questions still await answer. Among these may be mentioned the condition of the rectal mucosa in the so-called carrier state, the quantitative relationship between the lesion and the symptoms, and the comparative effect of different antiamebic preparations on the amebic ulcer. Sigmoidoscopy promises to be most helpful in unraveling these problems. An analysis of seventy-five cases of amebic dysentery and a summary of the sigmoidoscopic picture of fifty cases are presented.

**Archives des Maladies de l'App. Digestif, Paris**

26: 241-360 (March) 1936

- Physiopathologic Study of Hematopoietic Part of Stomach. A.-C. Guillaume.—p. 241.
- Hypertrophic Stenosis of Pylorus in Adult. E. Delannoy and G. Patoir.—p. 260.
- Statistical Study of Chronic Angiocholecystitis: Three Thousand Cases. E. Binet.—p. 273.
- \*Graphic Studies on Action of Tobacco Smoke on Motility of Small Intestine in Man. D. Simici and M. Popesco.—p. 295.

**Action of Tobacco Smoke on Small Intestine.**—Simici and Popesco studied the motility of the small intestine in man by recording the peristaltic contractions of the jejunum and ileum by means of a duodenal sound and a small rubber ampule. This was attached in the usual manner to a kymograph and thus recorded. They concluded that inhalation of cigar or cigarette smoke produces in accustomed smokers as well as in nonsmokers an increase in the motility of the small intestine. It usually begins a few minutes after inhalation of the smoke. The phenomenon almost always lasts for a considerable period. It may persist for from thirty to sixty minutes after the act of smoking has been stopped. The intestinal hypermotility, which is produced by inhalation of tobacco fumes in nontoxic doses, is probably caused by the exciting action of substances in the smoke, which appear at the moment of combustion on the parasympathetic vegetative system of the intestine. The individual vegetative tonus appears to affect to some degree the intensity and duration of the response. Smoking of a tobacco filtered through a beaker containing a concentrated solution of 5 per cent hydrochloric acid loses almost entirely its property of influencing the motility of the small intestine.

**Presse Médicale, Paris**

44: 449-472 (March 18) 1936

- Place of Microbial Germs in Asthma: Indications for Vaccinotherapy. Pasteur Vallery-Radot, P. Blamoutier and F. Nitti.—p. 449.
- Diagnosis of Calculi of Kidney and Ureter in Childhood. Guillemetin and R. Gayet.—p. 451.
- \*Treatment of Erysipelas. A. Meyer-Heine and P. Huguenin.—p. 454.

**Treatment of Erysipelas.**—Meyer-Heine and Huguenin state that since the work of Mietzsch and Klarer in 1932 it has been known that 4-sulfamido-2,4 diamino-azobenzene has a remarkable action on experimental streptococcal infections. They report the action of this substance on a considerable number of patients having erysipelas of the face and of the limbs. In the majority of instances the subsidence of general symptoms and local signs occurred rapidly. This was especially true of erysipelas of the face. There were some failures but no complications of importance. In general, the hydrochloride of sulfamido-chrysoidine seems to bring about a shortening of the febrile period, causing the rapid disappearance of the cutaneous symptoms. The authors are especially impressed with the effectiveness of this treatment in erysipelas of nurslings. The mode of action of the substance is not well known, but the results seem to be undeniably good.

**Schweizerische medizinische Wochenschrift, Basel**

66: 329-348 (April 4) 1936. Partial Index

- Urgent Surgical Indications in Recent Closed Traumatic Injuries of Cranium and Brain. F. Ody.—p. 329.
- Fatality in Case of Brucella Abortus Infection After Accident. A. Werthemann.—p. 333.
- \*Superficial Keratitis and Vitamin A. F. Stocker.—p. 335.
- \*Fractional Blood Transfusion. A. Fonio.—p. 337.
- Cerebral Tumor and Polyglobulism. E. Meiner.—p. 338.

**Superficial Keratitis and Vitamin A.**—Stocker says that in this report he applies the term superficial keratitis to superficial changes of the cornea, regardless of whether there is inflammation or not. After mentioning various etiologic factors, he points out that he was able to differentiate one group with a uniform etiology. The general condition of these patients is usually poor; they are emaciated, pale and nervous and complain of insomnia. The superficial epithelial lesions of the cornea are of various shapes and are usually located on the lower and lateral edges and on the lower quadrant. The local treatment gives as a rule only a temporary improvement. The fact that the general condition of these patients was poor sug-

gested the possibility of a nutritional disturbance. Moreover, in view of the protective action of vitamin A on the epithelial cells and of the importance of vitamin A in xerophthalmia and keratomalacia, it was assumed that a deficiency in vitamin A might play a part in the described form of superficial keratitis, and several patients were treated with vitamin A. The result was not only that the local corneal changes disappeared but also that the general condition improved. Some of the patients remained free from relapse for a considerable length of time, but in others there were recurrences after cessation of the vitamin medication. To be sure, renewed administration of the vitamin counteracted the relapses again. Studies conducted to determine whether a carotene deficiency in the diet or a functional insufficiency of the liver is responsible for the A avitaminosis of the patients with superficial keratitis indicated not so much an insufficient intake but rather a defect in the utilization of the vitamin.

**Fractional Blood Transfusion.**—Fonio shows that the blood can be separated into its constituents: The erythrocytes can be preserved for six or seven days without hemolysis. The transfusion of the erythrocytes was well tolerated in two cases. The blood platelets can likewise be isolated and stored. However, in order to avoid the formation of agglutination, it is necessary to add a 30 per cent solution of sodium citrate. Before resorting to the transfusion of the platelets it is necessary to remove the largest part of the sodium citrate. The author suggests how this can be done but admits that as yet he has no practical experience with the transfusion of platelets. The third constituent of the blood, the plasma II, from which the blood platelets have been removed, cannot be stored for long. The author points out that with this separation of the blood into its constituents it is possible to administer that portion of the blood which is lacking or is functioning inadequately, such as erythrocytes in anemia, platelets in thrombopenia, thrombasthenia and hemophilia, and plasma in fibrinopenia or as a protein therapy. He thinks that by omitting the unnecessary substances it might occasionally be possible to avoid undesirable complications. He admits that this problem requires further biologic investigations.

**Clinica Medica Italiana, Milan**

67: 145-218 (March) 1936

- Influence of Blood Transfusion on Velocity of Blood Circulation. A. Bertola.—p. 147.
- Constitutional Hemolytic Splenomegaly with Increase of Maximal Globular Resistance and Ovalocytosis and Poikilocytosis: Case. M. Testolin.—p. 155.
- Auriculoventricular, Interauricular and Emergency Heart Blocks Provoked by Means of Vagal Stimulation in Case of Elongation of PR Segment. A. Rubino.—p. 168.
- \*Amylase Reaction as New Method for Differentiating Exudates and Transudates. N. Fucci.—p. 176.
- Sulfur Metabolism in Chronic Articular Diseases. S. Battistini, F. Quaglia and A. Robecchi.—p. 179.
- Experimental Acute Hemorrhagic Pancreatitis. P. De Lucia and M. Torella.—p. 200.

**Method for Differentiating Exudates from Transudates.**—Fucci reports a test for differentiation of exudates and transudates. The technic is as follows: A decinormal solution of iodine in distilled water, a 1 per cent solution of sodium chloride in distilled water and, from this, a solution of 8.5 per thousand of sodium chloride are separately prepared. With the latter, eight solutions of soluble starch are made at 2, 1.75, 1.5, 1.25, 1, 0.75, 0.5 and 0.25 per thousand. Ten glass pipets are placed in a rack, the first eight of which are for the fluids to be examined; the other two are for controls. In each of the first eight pipets, 0.25 cc. of the unknown fluid is taken and in each of the last two (controls) 0.25 cc. of distilled water. Then 0.75 cc. of distilled water and 1 cc. of the 1 per cent solution of sodium chloride are added to each of the ten pipets. To the first eight pipets, 1 cc. of the different soluble starch solutions of the scale is added in their proper rotation. To the ninth and tenth pipets, 1 cc. of the 2 per thousand and of the 1 per thousand soluble starch solutions are added, respectively. The rack containing the pipets is placed in the incubator at 38 C. and left there for half an hour, after which it is taken out and the fluids in the pipets are allowed to cool in water or ice to the ambient temperature. Then three or

four drops of the decinormal iodine solution is added to each pipet and the reading is made. Fluids of inflammatory nature, such as pleural, peritoneal and synovial exudates, give either a yellow-whitish or golden color, which may be present in the eight first pipets or only in the last seven, with the first pipet showing a slight violet. Transudates, on the contrary, give a violet, which is more marked in the first five pipets, the last three giving a red violet. In the two control tubes, the typical violet, which indicates the starch reaction, is observed, being more marked in the first than in the second control tube, since the starch concentration in the former is larger than that in the latter. The test may be abbreviated by using seven pipets instead of ten; that is, five for the unknown fluids and two for control. The refinements of the technic are as follows: The mother sodium chloride solution should not be more than two days old. The iodine solution should not be more than twenty days old, provided it is kept in a cool place and in a colored container. The other solutions are prepared at the time of the test. The diluted fluids and starch solutions should be well mixed in the pipets before they are placed in the incubator. The contents of the pipets are well stirred after the iodine solution is added, but without disturbing the zone of initial transitory reaction. The color reading is made on the entire liquid column. The addition of a few more drops of iodine solution to the solutions in the tubes does not modify the results of the test but tends to clarify them.

### Prensa Médica Argentina, Buenos Aires

23: 789-848 (March 25) 1936

Thoracoplasty: Finochietto's Technic for Paradoxical Incision. R. Finochietto.—p. 789.

Differential Sign of Passive Pulmonary Congestion. J. I. Sacón.—p. 793.

Multiple Peritoneal Hydatidosis: Case. F. Basch.—p. 795.

Gastro-Enterocolic Aerophagia in Infants. F. Ugarte.—p. 800.

Segmental Cesarean Section. S. Malamud.—p. 803.

\*Disorders of Apparatus of Conduction in Rheumatic Heart Diseases in Children. J. C. Etcheves.—p. 820.

**Disorders of Conduction Apparatus in Rheumatic Fever.**—Etcheves made an electrocardiographic study on a group of thirty children suffering from rheumatic fever. He concludes that disorders of the conduction apparatus are frequent in heart diseases complicating rheumatic fever, both during the acute period of the fever and after its subsidence. They may be intra-auricular, auriculoventricular and intraventricular. Intra-auricular disturbances show themselves in the electrocardiogram by alterations in size and form of the P wave, which point to the existence of auricular hypertrophy complicating mitral stenosis and, sometimes also, mitral insufficiency. A P wave of low voltage in the three leads indicates diminished functional capacity of the auricle and, if it is of the broad type and appears in consecutive electrocardiograms, it indicates both the existence of auricular insufficiency and the proximity of fibrillation. Alterations of the P wave in several leads are of bad prognostic value. Simple incomplete and complete types of auriculoventricular block are frequent in the course of rheumatic heart diseases. Those of the simple type are the most frequent, especially during the periods of reactivation of the fever. The presence of auriculoventricular block in young patients suffering from fever of unknown etiology points to the rheumatic nature of the fever, while in patients suffering from rheumatic fever it indicates evolution of the infection. Its persistence after administration of intense salicylic treatment is of bad prognostic value. Disorders of intraventricular conduction show themselves in the electrocardiogram by alterations of the QRST complex, which may involve the QRS complex, the ST segment and the T wave or only a part of the complex (the bundle branch block). In the presence of disorders of the intraventricular conduction, the duration of the QRS complex slightly increases, the Q and S waves are rarely modified and the most important alterations are those of the R wave, which, if appearing in several leads in consecutive electrocardiograms, are of bad prognostic value. The modifications of the ST segment are numerous. Most frequently it is shortened and deviated above the iso-electric line. The modifications of the T wave are frequent. They predominate during the acute phase of the fever and may per-

sist after its subsidence. An abnormal T wave repeatedly appearing in consecutive electrocardiograms is of a bad prognostic value, which becomes worse if alterations of either the P wave or the QRS complex coexist with it. Alterations of the PR wave and of the ST segment are the most frequent electrocardiographic abnormalities in the course of acute rheumatic heart disease in children. None of the disorders of the conductive apparatus, however, are pathognomonic of rheumatic fever. They all prove the involvement of the myocardium. Intraventricular disorders restricted to only a part of the conductive apparatus are those concerned in the cases of bundle branch block in which the left, but never the right, branch of the bundle of His is involved. The block of the left bundle branch is of a reserved prognosis, because it indicates the presence of grave intramyocardial and valvular lesions. The intensity of the alterations of the conductive apparatus shown by the electrocardiograms is, as a rule, in agreement with the clinical condition of the patient.

### Klinische Wochenschrift, Berlin

15: 433-472 (March 28) 1936. Partial Index

\*Histologic and Roentgenologic Observations on Internal Organs Five Years After Intravenous Injection of Thorium Dioxide Preparation in Dog. T. Naegeli and A. Lauche.—p. 436.

Studies on Electrophoresis with Choline Derivatives. H. Rutenbeck.—p. 437.

Clinical Statistics on Life Expectancy in Coronary Thrombosis. F. Kisch.—p. 440.

\*Differentiation of Blood from Normal Persons and from Patients with Exophthalmic Goiter by Tadpole Experiment. L. György and B. Serény.—p. 443.

\*Value of Plummer's Treatment as Preparation for Operation in Exophthalmic Goiter. E. Melchior.—p. 446.

Quantitative Determination of Indican Content of Serum by Means of Step Photometer. F. Böhm and G. Grüner.—p. 450.

**Observations on Organs Years After Injection of Thorium Dioxide.**—Naegeli and Lauche describe observations on the internal organs of a dog that was killed five years after a thorium dioxide preparation had been injected as a contrast medium. The roentgenogram, which was made shortly before the animal was killed, revealed that the density of the shadows of liver and spleen had considerably decreased (comparison with roentgenogram made two years previously). However, two new shadows, which were visible beside the vertebral column, were interpreted as lymph nodes. The histologic examination disclosed no thorium in the lungs, suprarenals, kidneys and pancreas. In the spleen, the cells containing thorium were found chiefly on the trabecular margins, and in the liver the traces of thorium were found chiefly near the capsule, whereas it had largely disappeared from the deeper layers. Some of the lymph nodes contained considerable amounts of thorium and had become necrotic; others contained only small amounts of thorium. The authors reach the conclusion that the thorium, which is first stored in the liver and spleen, gradually passes into the lymph nodes and causes necrosis. To be sure, the liver and spleen did not become impaired even after five years, but neither was there any sign of an elimination of the thorium from the organism. The authors repeat their warning against the use of this contrast medium, particularly in large quantities and in young persons, for they assume that the impairment of the regional lymph nodes can be expected also in human subjects.

**Differentiation of the Blood of Normal Persons and of Patients with Exophthalmic Goiter.**—After pointing out that Reid Hunt's acetonitrile test is not quite satisfactory for the differentiation of the blood of patients with exophthalmic goiter, because it is positive also in several other disorders, György and Serény describe their own observations in the tadpole experiment. They wanted to determine whether the action exerted by blood specimens on the metamorphosis of tadpoles would permit a differentiation of blood or urine of patients with exophthalmic goiter from normal blood or urine. In summarizing their observations they say that neither normal blood or urine nor the blood or urine from patients with exophthalmic goiter influences the metamorphosis of tadpoles. Thyroxine alone, as was known from former investigations, has a greatly stimulating effect on the metamorphosis. If thyroxine is combined with normal blood, the promoting action

on the metamorphosis is lessened; that is, the normal blood reduces the stimulating action of thyroxine. The same can be said of the blood of patients with exophthalmic goiter, except that its inhibiting action is somewhat less than that of normal blood. In some cases the differences were considerable while in others they were not, and so the authors conclude that, although generally in the tadpole experiment the inhibiting effect of normal blood on the thyroxine action is greater than that of the blood of patients with exophthalmic goiter, the difference is not sufficiently clear to permit a definite differentiation of blood specimens.

**Value of Plummer's Preoperative Iodine Treatment.**—In view of the fact that some surgeons still have a somewhat skeptical attitude toward Plummer's preoperative iodine treatment in exophthalmic goiter, and in order to prevent this from deterring others from employing this valuable method, Melchior describes his own favorable experiences. He employed Plummer's preoperative iodine treatment in sixty-four cases of exophthalmic goiter. He says that his cases were of the severe type. He advises rest in bed, a chiefly lactovegetarian diet and a quieting psychotherapeutic influence during the preoperative period. He begins the iodine medication as a rule by giving five drops of aqueous solution of iodine three times a day, gradually increasing the amount to three times fifteen drops or even more. To prevent auricular or ventricular fibrillation he resorts to quinidine, and in typical cardiac disturbances he gives digitalis and strophanthin preparations. Regarding the duration of the preoperative iodine treatment, he says that it cannot be definitely established at eight or ten days but may have to be continued for several weeks. The author emphasizes that Plummer's preoperative iodine treatment exerts a favorable influence on the surgical intervention as well as on the postoperative period. In cases in which the preoperative treatment had been adequate, he saw a threatening postoperative reaction only once. He also shows that Plummer's method permits operative treatment in cases in which otherwise it would be impossible.

### Münchener medizinische Wochenschrift, Munich

83: 547-586 (April 3) 1936. Partial Index

- Obstetrics in Home in Case of Premature Rupture of Bag of Waters at End of Pregnancy. C. Holtermann.—p. 547.  
Impairment by Medicaments. A. Schittenhelm.—p. 552.  
\*Influenza Bacilli as Cause of Meningitis. Elisabeth Bender and H. Bruns.—p. 557.  
\*Treatment of Psoriasis with Extract of Adrenal Cortex. T. Gruneberg.—p. 561.  
Protection Against Measles by Means of Placental Extract. G. Paschla.—p. 564.

**Influenza Bacilli as Cause of Meningitis.**—Bender and Bruns point out that acute suppurating meningitis in its epidemic as well as in its sporadic form is most frequently caused by the meningococcus of Weichselbaum. Observations on 537 cases indicated that approximately 71 per cent were caused by the meningococcus, 10 per cent by the pneumococcus, about 6 per cent each by the tubercle bacillus, streptococcus and staphylococcus and slightly more than 1 per cent by the influenza bacillus. The authors report two cases of influenzal meningitis, in which repeated bacteriologic tests were made. As far as the clinical aspects were concerned, the cases presented nothing unusual, but the authors emphasize that every case of meningitis should be subjected to bacteriologic examination. They deplore that influenza bacilli are not always systematically searched for and stress that the cultures, which are made on blood-free mediums and are sterile after twenty-four hours, should be given particular attention. Moreover, discharges from the ears as well as the sputum should be examined. The two cases reported terminated fatally. The influenza bacillus causes one of the severest forms of meningitis, which, according to some reports, has a fatal outcome in about 92 per cent of the cases.

**Extract of Adrenal Cortex in Treatment of Psoriasis.**—After mentioning the experiences of other investigators with extract of the adrenal cortex in psoriasis, Gruneberg describes his observations. He gives subcutaneous or intramuscular injections with from 2 to 6 cc. of the cortex extract every day or every second day. The dosage is determined by the severity of the case and the duration of the treatment by the rapidity

with which the results become manifest. As a rule, it is necessary to continue the treatment for at least five or six weeks. Some improvement is usually noticeable long before this time. The administration of the cortical extract is frequently inadequate for a complete cure and it is combined with local measures. The treatment is most effective in the form of psoriasis that is complicated by arthritic processes. The author thinks that it should always be tried in these cases. Generalized psoriasis likewise responds favorably to the adrenal cortex treatment. However, relapses are not prevented by this therapy, although prolonged treatment may have a certain after-effect, particularly in the complicating articular processes.

### Strahlentherapie, Berlin

55: 369-544 (March 21) 1936. Partial Index

- Lympho-Epithelial Carcinoma. R. Baumann-Schenker.—p. 369.  
Epicrisis of Irradiated Cervical Carcinomas. H. Hausding.—p. 387.  
Investigations on Action of Roentgen Rays on Metabolism of Malignant Tumors. K. Inouye.—p. 409.  
\*Combined Treatment of Tonsillar Cancer. P. von Kisfaludy.—p. 429.  
\*Postoperative Irradiation of Cervical Cancer. F. Friedl.—p. 457.  
Treatment of Incurable Carcinoma. J. Grode.—p. 462.  
\*Sensitization of Neoplasms Refractory to Roentgen Rays by Means of Short Waves. G. Fuchs.—p. 473.

**Treatment of Tonsillar Cancer.**—Von Kisfaludy considers radium therapy indispensable in the treatment of tonsillar cancers. He advises that the larding with radium needles be done by an experienced radiologist who has surgical knowledge. The needles he uses contain 3.3 or 6.6 mg. of radium element. Depending on the size of the tumor, he introduces from four to ten needles and leaves them in place for from twenty-four to thirty-six hours. He maintains that this method of application is superior to the former practice of using needles that contain only 1 or 2 mg. and that have to remain in the tissues for from five to eleven days. The shorter duration of the radium application reduces the secondary irradiation, the danger of tissue necrosis, of abscess and edema formation and of general infection or hemorrhage. Moreover, it is less annoying for the patient if the radium larding remains in place only for from twenty-four to thirty-six hours instead of for a number of days. The regional glands are treated with roentgen rays: 200 roentgens are applied from six to eight times. After six or eight weeks, the roentgen irradiations of the glands are repeated. However, if the glands are enlarged, they are excised and the surgical treatment is followed by irradiation. The results obtained with this combination method prove the advantage of the author's method of larding with radium needles.

**Postoperative Irradiation of Cervical Cancer.**—Friedl shows that opinions are divided as to the value of postoperative roentgen irradiations, and he decided to investigate the cases treated at his clinic in this respect. On the whole, he observed no decided advantage in the cases that had been subjected to postoperative roentgen irradiation. The permanent results were about 5 per cent better in the irradiated cases. He suggests that, in view of this slight improvement, it might be better to look for a method promising better results, and points out that postoperative treatment with radium seems to do this.

**Sensitization of Neoplasms by Means of Short Waves.**—Fuchs cites the various methods of sensitization of ray refractory tumors which have been tried in the course of recent years. He calls attention to the vasodilatory effect and to the induction of hyperemia by short wave treatment. He decided to utilize the hyperemia in order to increase the ray sensitivity of tumors. He followed Liebesny's so-called athermic method of short wave therapy, which utilizes chiefly the electric actions and excludes largely the heat effect. He resorted to sensitization in three cases of bronchial carcinoma and one case each of mammary and esophageal carcinoma. In order to obtain an adequate depth action he worked with an electrode skin distance of at least 10 cm. The wavelength was 15 meters, and the irradiations lasted twenty minutes. They were given daily and, after an interval of two or three hours they were followed by the roentgen irradiation. The latter was conducted according to the protracted fractional method of Coutard. At every session 200 roentgens was administered to one field. It was observed that the ray reaction of the skin induced by the Coutard irradiations was neither increased nor otherwise modi-

fied by the application of short waves. Moreover, the author emphasizes that in his method the combined short wave and roentgen therapy does not involve the danger of an increase in the malignancy of the tumor. He admits that his limited experience permits no definite evaluation of the value of the sensitizing short wave irradiations, but he considers their use justified in carcinomas that are refractory to ray treatment.

### Zentralblatt für Gynäkologie, Leipzig

60: 785-848 (April 4) 1936

Studies on Amount of Corpus Luteum Hormone in Placenta. C. Ehrhardt and H. Fischer-Wasels.—p. 787.

\*Gonadotropic Function of Anterior Lobe of Hypophysis During Menopause and Its Modification by Follicular Hormone. E. Engelhart and E. Tscherne.—p. 790.

Results of Treatment of Carcinoma of Corpus Uteri. R. Volbracht.—p. 796.

Acute Dilatations of Stomach Developing After Abdominal Operation. F. Palik.—p. 803.

\*Pathogenesis of Congenital Dropsy of Fetus and Placenta. (Placental Villi and Uterine Mucus in Vein of Umbilical Cord). J. Czyżak.—p. 807.

**Gonadotropic Function of Hypophysis During Menopause.**—Engelhart and Tscherne point out that the gonadotropic hormones of the anterior lobe of the hypophysis cause cyclic changes in the ovaries and that the ovaries in turn act on the anterior hypophysis. After the ovarian function is abolished, typical histologic changes develop in the anterior hypophysis. It has been proved that the changes in the anterior hypophysis of castrated animals can be counteracted by the administration of estrogenic substance. The authors decided to investigate this problem in women. In studies on several menopausal women they found that the administration of estrogenic substance reduces or entirely abolishes the elimination of the follicle maturation hormone of the anterior hypophysis. These studies indicate an inhibiting influence of the estrogenic substance on the anterior lobe of the hypophysis. However, there is a morphologic difference in the hypophyses of menopausal and castrated women, for whereas that of menopausal women decreases in weight, that of castrated women increases, and whereas in the hypophysis of castrated women the eosinophil cells are increased, this increase is absent in menopausal women. These morphologic differences indicate functional differences; namely, a lack of the luteinization hormone in menopausal women.

**Pathogenesis of Congenital Dropsy of Fetus.**—Czyżak reports two cases of congenital dropsy of fetus and placenta. Microscopic sections of the fetal organs revealed everywhere foci of blood formation, which were especially numerous in the liver, kidneys and adrenals. The large, edematous placenta showed an abundance of connective tissue cells and a deficiency of blood vessels. The villi were larger than usual but consisted chiefly of connective tissue cells with few and small capillaries, the lumen of which seemed to be constricted by the proliferating connective tissue. They contained only few erythrocytes, many of which had nuclei. Some lumens were entirely empty. Moreover, some of the edematous villi contained no blood vessels. Examination of the blood of fetus and mother disclosed such a similarity that differentiation was impossible. A large number of nucleated cells were found among the erythrocytes. All stages of erythrocytic development were present. The blood picture of the mother returned to normal four days after delivery. The similarity between the fetal and maternal blood pictures was explained by the aspects of the sections of the umbilical cord. Many of the sections revealed villi in the vascular lumen and others showed portions of the uterine mucosa with glands. This shows that the normal barrier of the placenta had broken down so that corpuscular elements from the maternal circulation entered the fetal circulation, and vice versa. The author thinks that this abnormal circulation is the cause for the toxic action, which in the placenta resulted in proliferation of connective tissue, obliteration of the blood vessels and edema, and which in the fetus caused severe anemia, characteristic foci of blood formation in the internal organs and generalized dropsy. The author thinks that the defect in the placenta (breakdown of barrier between mother and fetus) is a factor in the pathogenesis of fetal and placental dropsy.

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\*Pathologic Alterations in Gastritis and Their Relation to Ulcer and Cancer. G. L. Derman and E. A. Dudkevich.—p. 77.

What Is Certain and What Is Doubtful in Pathogenesis and Etiology of Malignant Growths. N. N. Petrov.—p. 128.

Morphogeneity of Mammal Gland Cancer. B. Kooliabko.—p. 263.

**Gastritis.**—Katsnelson and Zorina studied 100 cases of gastritis which they classified on the basis of the character of the gastric secretion into normacid, hyperacid, subacid and anacid types. They used the Ewald-Boas test breakfast and a stomach tube to remove the contents. In addition to this method, the fractional determination after a beef tea breakfast was practiced in the anacid group. In the cases in which the fractional method failed to demonstrate free hydrochloric acid, 0.5 mg. of histamine was injected intracutaneously. The cases were studied roentgenologically with particular regard to the state of the mucosal contour. The following factors were found to play an important part in the etiology of exogenous gastritis: irregular meals, excessive condiments, too hot meals, alcoholism, smoking and certain drugs as well as vocational factors. In hematogenous gastritis an important part was played by the infectious diseases, cholecystitis, ulcer and carcinoma of the stomach, and circulatory and metabolic disturbances. The clinical picture of gastritis presented a multiplicity and a variety of symptoms, while that of a pure gastric ulcer was characterized by a scarcity of symptoms. All forms of chronic gastritis, the anacid in particular, may run a latent course without causing symptoms for a long time. The authors administered histamine in twenty-seven cases of anacid gastritis and observed an increase in the free hydrochloric acid (from 0 to 0.1 or 0.44) in only 19 per cent. The quantity of the gastric juice however was considerably increased. These results suggest the existence in their cases of a severe gastritis with profound anatomic alterations in the specific secretory glands. Clinical diagnosis of gastritis was not borne out by the roentgenologic investigation in 52 per cent of their cases. The authors conclude that roentgenologic study of the mucosal relief is not of a decisive significance in the diagnosis of gastritis. The latter must depend on a careful consideration of all available diagnostic criteria.

**Relation of Gastritis to Ulcer and Cancer.**—Derman and Dudkevich studied 236 stomachs which had been resected because of an ulcerative or carcinomatous lesion. In their material chronic ulcers were localized most frequently in the pyloric portion of the stomach and along the gastric channel. Ulcerative and carcinomatous lesions of the stomach frequently exhibited inflammatory exudative manifestations in the form of an infiltration of the mucosal and the deeper layers of the wall of the stomach with neutrophils, eosinophils, lymphoid cells and plasma cells. A gradual diminution of the inflammatory reaction was noted the farther the area studied was removed from the ulcerative or cancerous lesion. The authors are inclined to consider these inflammatory manifestations secondary and complicating lesions rather than primary and the cause of an ulcer or cancer.

### Hospitalstidende, Copenhagen

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Changes in Electrocardiogram in Oxygen Deficiency. K. Larsen.—p. 277.

Ureter Transplantation, Especially in Exstrophy of Bladder. S. A. Hanssen.—p. 285.

\*Investigations on Sulfatemia in Kidney Diseases. E. Øllgaard.—p. 292.

**Sulfatemia in Kidney Disease.**—Øllgaard says that, while there is normally from 0.79 to 1.50 mg. of sulfur per hundred cubic centimeters as sulfate in the blood serum, in uremia the amount may rise to 16 mg. The retention of sulfates is on the whole parallel with the urea retention but seems to exceed it in milder degrees of insufficiency and is assumed to contribute not inconsiderably to the acidosis in uremia.



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## RECENT EXPERIMENTAL WORK ON THE PATHOGENESIS OF MUL- TIPLE SCLEROSIS

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In recent years the pathogenesis of multiple sclerosis has been investigated intensively, especially in this country. The results of these observations, made in scattered places, have never been brought together. My purpose in this communication is to summarize them and to make what comparisons appear to be possible.

In the 1870's, after the disease had been made well known by Charcot, much was said concerning possible causes. Out of this discussion some views emerged, which are still of great interest. Among the most ingenious of the hypotheses was one of Pierre Marie's, which deserves rescue from the forgetfulness that has encompassed it.<sup>1</sup> Marie observed a patient who, three years following an attack of typhoid, developed multiple sclerosis; he suggested that sclérose en plaque might be a tertiary stage of typhoid in the same sense in which tabes dorsalis is recognized as a manifestation of the tertiary stage of syphilis. In the light of present day observation such an idea does not appear to be relevant to multiple sclerosis, but it may deserve consideration in respect to other more definitely infectious states, such as postencephalitic paralysis agitans.

Until recent times much of the thought about multiple sclerosis has been in terms of its being an infectious disease. Gradually, as evidence has accumulated, opinion in this country particularly has swung away from this point of view and is forming more and more what must be called a theory of toxemia. The toxemia theory is by no means a new one, however. In the 1880's it was Oppenheim's explanation; he attributed the lesions to the action of toxins—not a single toxin—most of which, he thought, were probably exogenous. In particular, he stressed lead. He had no experimental evidence; the idea came simply from the fact that many of his patients, in their occupations, were exposed to lead intoxication.

No experimental attack was made until 1913, and for good reason. Twenty years of feeling, discussion, remissions and helplessness was enough to mobilize sufficient confusion to submerge any one who studied multiple sclerosis closely. By 1896 the world was quite ready for the pleasant relaxation which the dictum of

Struempell<sup>2</sup> made possible. Struempell earned the eternal gratitude of those who had thought to the point of exhaustion when he declared that he felt that multiple sclerosis was due to an inherent, congenital tendency of the glia to overgrow, the overrunning glia demolishing the myelin sheaths. Struempell had no shred of evidence for this idea; it was chiefly that he had seen no cases that could be explained by lead poisoning or by typhoid. But the doctrine became galenic. It was accepted as the truth, and for seventeen years workers, faced with the impenetrability and hopelessness of this dogma, rested. In passing, it is of interest to note that this highly sterile paper closed with a short paragraph in which was noted for the first time the important fact that the abdominal reflexes were lost in 67 per cent of the cases of multiple sclerosis.

In 1913, Bullock (now Gye),<sup>3</sup> investigating the possible infectious nature of the disease, made the first experimental attack. He inoculated rabbits and guinea-pigs with spinal fluid from patients with multiple sclerosis, and although he appeared to have transmitted the disease to some of the animals and although there has been some confirmation of his work, many have declared that there were faults in his technic. Despite these and the inoculation experiments of other workers, it still cannot be declared that multiple sclerosis has been experimentally produced in animals by inoculation.

The idea of infection has been more fully explored by Kuhn and Steiner,<sup>4</sup> and later by Steiner alone.<sup>5</sup> This investigator has for many years studied the possibilities of a spirochetal origin. He apparently has occasionally demonstrated spirochetes in the neural tissue in cases of multiple sclerosis. More commonly, he has been able to show what he believes to be the remains of disintegrated spirochetes. If Steiner's spirochetes were more numerous in any given case the results would be more convincing. An observer is impressed with the resemblance to spirochetes of some of the stained structures but misses the profusion of organisms which is seen in syphilis. Steiner himself believes that the scarcity of organisms is due to his having had an opportunity to examine only old cases; he has studied no specimens from individuals who had died while the process was, presumably, still fresh. Although several investigators appear to have confirmed Steiner's work, a number of others have failed to do so. The time has not yet arrived for final conclusion concerning Steiner's observations. His studies are the only contemporary ones that give any real support to the infectious theory.

2. Struempell, A.: Zur Pathologie der multiplen Sklerose, *Neurol. Centralbl.* 15:961, 1896.

3. Gye, W. E.: The Experimental Study of Disseminated Sclerosis, *Brain* 44:213, 1921-1922.

4. Kuhn, Philalethes, and Steiner, Gabriel: Ueber die Ursache der multiplen Sklerose, *Med. Klin., Vienna* 13:1007, 1917; *Ztschr. f. Hyg. u. Infektionskr.* 80:417, 1920.

5. Steiner, Gabriel: Spirochäten im menschlichen Gehirn bei multipler Sklerose, *Nervenarzt* 1:457 (Aug. 15) 1928.

Read before the New Jersey Neuropsychiatric Association, April 17, 1935.

From the Neurological Institute and the Department of Neurology, Columbia University College of Physicians and Surgeons.

1. Marie, Pierre: Sclérose en plaques et maladies infectieuses, *Progr. méd.* 12:365, 1884.

The recent announcement of Sachs and Steiner<sup>6</sup> of a complement fixation test for the disease is not necessarily confirmatory of the spirochetal theory.

The Purves-Stewart-Chevassut spherula insularis has long since been entirely discarded.

The toxemia point of view has gained support in recent times from several sources. Investigations in the last few years have produced evidence for it, although, both individually and collectively, the results of all these studies must still be regarded with conservatism. The term "toxemia" is used here in a broad sense, referring to the action of any myelinolytic substance, or even condition, on the myelin sheaths. This substance or condition need not be toxic for any structure in the body other than the myelin sheath. It need not be one single substance—there may be a variety of them, all having the same capacity to cause myelin disintegration. From the standpoint of toxemia, the active agent would not be of an infectious nature. This conception also implies that the myelin does not degenerate because of a progressive gliosis.

As an introduction to such a toxemia theory, it would be well to refer to the conceptions of Hallervorden,<sup>7</sup> although his papers appeared at a later date than some of the other works to be discussed. Hallervorden was much impressed by the pathologic appearance of a case described in 1928 by Balo.<sup>8</sup> Later Hallervorden and Spatz<sup>9</sup> described two additional similar cases. The lesions were chiefly in the form of concentric rings of demyelination, and in the center of each focus was a blood vessel. Hallervorden recalled the earlier (1898) experiments of Liesegang, who had performed a series of tests. He dissolved ammonium or potassium bichromate in gelatin; drops of silver nitrate were placed on the surface of the gelatin. The silver nitrate, diffusing into the gelatin, reacted with the bichromate to form the dark silver chromate. But instead of forming as a solid black mass the silver chromate appeared in concentric rings. This was explained as follows: The silver nitrate reacted with the first bichromate it encountered, forming the black silver chromate. The resultant silver chromate adsorbed the additional adjacent bichromate. Thus, a zone was left without any bichromate. The silver nitrate, diffusing into this bichromate-free area, had nothing to react with, so that this zone remained uncolored. The next black ring was formed at the point at which silver nitrate again came into contact with bichromate. The whole reaction was repeated again and again.

Hallervorden, seeing an analogy between Liesegang's chemical experiments and Balo's case, came to the belief that in that case the myelin had been caused to disintegrate precisely in the same way that Liesegang's rings were formed; namely, by diffusion of a demyelinating agent from a central point. This would imply that the neural tissue, in its living state, served as an inert colloid comparable to Liesegang's gelatin. Hallervorden was ready to adopt this as a hypothesis.

Hallervorden bridged the gap between Balo's disease and multiple sclerosis by quoting a case of Steiner's in which, besides the orthodox type of plaque, there was one in which the demyelination took the form of concentric rings. He thought that the rarity of this con-

centric arrangement in multiple sclerosis was not a convincing argument against the diffusion principle, since diffusion through colloids can, of course, take place in various ways, and not necessarily with the production of concentric rings. He considered that he had presented a fair argument for the general principle of diffusion as the mechanical background in many types of demyelinating disease, including multiple sclerosis. There is no doubt that Hallervorden's ideas are interesting and should serve as a part of the toxemia conception of multiple sclerosis, even though nothing was actually proved by his work.

Actual testing of the toxemia theory has been carried out in two main ways. One approach has been the attempt to produce demyelination in animals by the injection of any toxins which would yield results. The other has been the effort to identify a certain toxin, the presence of which is suspected—a toxin with specific lipolytic action. It can be said at this point that, while each of these approaches has yielded information, neither has solved the problem.

The only investigator who has directly produced demyelination by experimental toxemia is Ferraro.<sup>10</sup> He injected small doses of potassium cyanide into monkeys and cats and, in the majority of instances, obtained multiple areas of demyelination. It is of considerable interest that some of his lesions had the concentric appearance to which Hallervorden gave so much thought. The idea of using potassium cyanide as the toxin is not far fetched, although it might seem to be at first consideration. Ferraro observes, apropos of the metabolic rôle played by cyanide:

Cyanide is part of our intermediary metabolism and, according to Werner, the hydrolysis of urea by acids or bases would result in a dissociation into ammonia and cyanide acid. According to A. P. Matthews, in the course of biological oxidations isocyanic acid may be formed, which undergoes rearrangement with ammonia into urea. Salkowsky also believes that urea may be formed by the transformation of cyanamide, and Fosse considers cyanic acid the immediate precursor of urea.

Recently Brand and Harris expressed the belief that on the basis of the cyanic acid theory of Salkowsky, Werner and Fosse creatine may possibly arise from a side reaction between cyanic acid and glycine.

Intensive work has also been done by Putnam and his collaborators<sup>11</sup> in the use of toxins, but from a modified point of view. They have produced patchy demyelination in dogs by the employment of tetanus toxin, carbon monoxide poisoning and the injection of cod liver oil emulsion resulting in the formation of emboli.

From all these results it seems quite clear that patchy demyelination can be induced in the intact animal by the injection not only of toxins but of different toxins, and perhaps by a variety of mechanisms. Putnam's explanation, however, does not invoke the direct action of the toxin on the myelin. He believes that these substances exert their effect by producing venous emboli or thrombi, which, by causing a slight relative anemia, induce local myelin disintegration. That this is possible has been shown by Putnam, in experiments with the injection of bland, oily substances against the blood stream into the ligated longitudinal sinuses of dogs. Perivenous demyelination was the outcome. The

6. Sachs, H., and Steiner, G.: Serologische Untersuchungen bei multipler Sklerose, *Klin. Wchnschr.* 13:1714 (Dec. 1) 1934.

7. Hallervorden, J.: Zur Pathogenese der multiplen Sklerose und ein Vorschlag zur Therapie, *München. med. Wchnschr.* 79:602 (April 8) 1932.

8. Balo, Josef: Encephalitis Periaxialis Concentrica, *Arch. Neurol. & Psychiat.* 19:242 (Feb.) 1932.

9. Hallervorden, J., and Spatz, H.: Ueber die konzentrische Sklerose und die physikalisch-chemischen Faktoren bei der Ausbreitung von Entmarkungsprozessen, *Arch. f. Psychiat. u. Nervenkrankh.* 98:641, 1933.

10. Ferraro, Armando: Experimental Toxic Encephalomyelopathy, *Psychiatric Quart.* 7:267 (April) 1933.

11. Putnam, Tracy; McKenna, John, and Evans, Joseph: Experimental Multiple Sclerosis in Dogs from Injection of Tetanus Toxin, *J. f. Psychol. u. Neurol.* 44:460, 1932. Putnam, Tracy; Morrison, L. R.; McKenna, John: Experimental Demyelination, *Tr. Am. Neurol. A. S.* 45:1, 1931. Putnam, T. J.; McKenna, J. B., and Morrison, L. R.: Studies in Multiple Sclerosis: I. The Histogenesis of Experimental Sclerotic Plaques and Their Relation to Multiple Sclerosis, *J. A. M. A.* 97:1591 (Nov. 28) 1931. Putnam, Tracy: The Pathogenesis of Multiple Sclerosis: A Possible Vascular Factor, *New England J. Med.* 209:786 (Oct. 19) 1933.

presence of such thrombi in the nervous systems of individuals dying with multiple sclerosis is also attested by Putnam. It should not be understood, however, that Putnam believes that thrombi are necessarily the result of toxic action in the human patient. He remains, at present, uncertain as to their origin.

Still another modification of the general toxic approach has been that of Rivers and Schwentker.<sup>12</sup> He has recently produced patchy demyelination in monkeys by the frequently repeated intramuscular injection, over a long period, of an alcoholic extract of brain lipoids. In this study the authors considered that they were working with an allergic process. They believed that they were administering an antigen to which the neural myelin might be sensitive. Actually, this may not be the explanation of the results. It is perfectly possible that a straightforward toxin was being given which acts, perhaps in the same general way as the toxins used by Ferraro and by Putnam.

These are the well controlled pieces of work which have been done in the production of experimental demyelination. There is no question that they have produced results.

The difficulty with this type of approach, as it has thus far been used, is, in my opinion, a very serious one. It is impossible to link the experimental results with the disease or syndrome of multiple sclerosis except by syllogistic argument. It can indeed be said that pictures resembling multiple sclerosis have been produced in animals, but the disease itself has not. This will be accomplished only when patchy demyelination has been caused by the injection into animals of material obtained from human patients. This, of course, is not the only criterion, but it is a prerequisite to all others. Steiner's work, and some of the earlier attacks from the standpoint of infection, did make use of human material, but, as has been stated, these efforts still lack final confirmation.

A different type of approach to the toxemia theory has also been made. The attempt was not to produce experimental demyelination but to consider patients themselves in an effort to learn whether demyelinating agents or conditions might exist in vivo.

From this standpoint, Cone, Russel and Harwood<sup>13</sup> have made an inquiry into the rôle of lead poisoning in multiple sclerosis. These authors conceived the ingenious idea that the periods of exacerbation and of remission in multiple sclerosis might be associated with the mobilization into the circulation, and the removal from it, of lead. Their studies yielded some evidence that such may indeed be the case. The chief obstacles to final acceptance of their idea are two: the difficulty inherent in quantitative estimations of the amount of lead present in body fluids, and lack of information concerning the amounts of circulating lead which should be considered normal for a given individual. As these matters are gradually elucidated, the part played by lead in multiple sclerosis will undoubtedly be better understood.

The suggestion was made by Marburg, many years ago, that the lesions in multiple sclerosis might be the result of the action of an enzyme which destroys lecithin. No attempt was made to investigate this idea until 1929, when, in ignorance of Marburg's idea,<sup>14</sup>

I commenced an experimental attack from the same point of view. The plan was to seek not particularly a lecithinase but a lipolytic agent of any sort which might affect myelin. The first experiments consisted in the immersion of segments of the spinal cord of rats in blood plasma from patients with multiple sclerosis. Sections of these cords after twenty-four hours of such immersion showed that multiple sclerosis blood had a demyelinating action which was not demonstrable in blood from controls. The part of the blood which gave the best results was the plasma. The results were very suggestive but not sufficiently marked. They did indicate that the blood of patients contained something which had a demyelinating potentiality. Weil and Cleveland<sup>15</sup> were able to confirm these observations, although they employed serum instead of plasma and used a different method of studying lipolysis.

From that time until the present, the inquiries from this point of view have been of a chemical nature.<sup>16</sup> The aim has been to learn whether the apparent difference between the lipolytic activity of multiple sclerosis and control blood could be more firmly established. Two different types of chemical attack have been made, and both have indicated that such a difference does exist. Serum has been employed instead of plasma, as a matter of convenience. The working principle has always been the mixture of the serum with a lipid. Lecithin was used as the substrate in one series and certain esters were used in the other. Measurement was made of the degree to which the lipid was broken down by the serum. This was easily done by estimating the amount of fatty acid produced in the mixture after an incubation period of twenty-four hours. It was always found that there was a decided difference between the various characteristics of the lipid breakdown caused by the action of multiple sclerosis and of control serums. The manner in which these differences showed themselves is intricate and elaborate and it is not essential to relate them here. The chief difficulties with these results are their complexity of interpretation and the fact that it has always been necessary to make the comparisons in groups. It was always a group of control serums that had to be contrasted with a group of multiple sclerosis serums. It was never possible to obtain results sufficiently sharp to enable one to identify a given case as one of multiple sclerosis. The continued search for a method which could accomplish this has led to an unexpected observation, which will be discussed later.

While these studies were proceeding, Weil<sup>17</sup> and Crandall and Cherry<sup>18</sup> of Chicago were interested in similar conceptions. Crandall and Cherry reported in 1932 that they could confirm my results in the investigation of lipolytic activity. They also found differences between multiple sclerosis and control bloods when the lipolytic action was tested. Their method differed partly in the employment of olive oil as a substrate and their interpretation was totally different. They made the suggestion that the lipolytic changes might be dependent on liver damage.

15. Weil, Arthur, and Cleveland, David: A Serologic Study of Multiple Sclerosis, *Arch. Neurol. & Psychiat.* 27: 375 (Feb.) 1932.

16. Brickner, Richard: Studies of the Pathogenesis of Multiple Sclerosis: II. Evidence of the Presence of an Abnormal Lipase in the Blood in Multiple Sclerosis, *Bull. Neurol. Inst., New York* 1: 105 (Jan.) 1931; III. Further Evidence of Abnormal Lipolytic Activity in the Blood in Multiple Sclerosis, *Bull. Neurol. Inst., New York* 2: 119 (March) 1932.

17. Weil, Arthur: (a) The Effect of Hemolytic Toxins on Nervous Tissue, *Arch. Path.* 9: 828 (April) 1930; (b) A Study of Etiology of Multiple Sclerosis, *J. A. M. A.* 97: 1587 (Nov. 28) 1931.

18. Crandall, Lathan, and Cherry, Ian: Blood Lipase, Diastase and Esterase in Multiple Sclerosis; a Possible Index of Liver Dysfunction, *Arch. Neurol. & Psychiat.* 27: 367 (Feb.) 1932.

12. Rivers, Thomas, and Schwentker, Francis: Encephalomyelitis Accompanied by Myelin Destruction Experimentally Produced in Monkeys, *J. Exper. Med.* 61: 689 (May) 1935.

13. Cone, William; Russel, Colin, and Harwood, Robert: Lead as a Possible Cause of Multiple Sclerosis, *Arch. Neurol. & Psychiat.* 31: 236 (Feb.) 1934.

14. Brickner, Richard: Studies on the Pathogenesis of Multiple Sclerosis, *Arch. Neurol. & Psychiat.* 23: 715 (April) 1930.

Accordingly, Weil and Crandall<sup>19</sup> ligated the cystic or pancreatic ducts in dogs, following which they frequently obtained demyelination in the nervous system of the animals. A demyelinating substance was also demonstrable in the blood, as tested by the rat cord immersion method. This material was declared not to be an enzyme, since it survived the effects of heat and since its presence appeared to be independent of the level of other lipases in the blood.

Karady<sup>20</sup> has also confirmed the finding of lipolytic abnormalities in multiple sclerosis serum. He has gone further and demonstrated lipasic changes in the duodenal contents in multiple sclerosis.

In addition, Weil<sup>17b</sup> has looked for a "myelolytic toxin" in the urine of patients with multiple sclerosis. He has found it, according to tests made with the rat cord immersion method. He states that it too is thermostable and is therefore not actually an enzyme.

Further study is required for the elucidation of these points. The same is to be said for my own investigations. Granted that a difference exists between the ability of blood from control and that from multiple sclerosis patients to split various lipoids, of what does this difference consist? There are a number of possibilities, and the profession is not in a position to choose between them. The alternatives are:

1. That the action is that of an enzyme. If it is an enzyme, it may be

- A. An abnormal enzyme.

- B. A normal enzyme in abnormal quantity.

- C. A normal enzyme in normal quantity, but in an abnormal milieu, which makes it act in abnormal fashion.

2. If it is not an enzyme, it may be

- A. A foreign substance with lipolytic power.

- B. A normal lipolytic substance in abnormal quantity.

- C. A normal lipolytic substance in an abnormal milieu, which causes it to act abnormally.

In addition, it has not been proved that this abnormal lipolytic activity is actually of primary importance in the pathogenesis of multiple sclerosis. It accompanies multiple sclerosis, but it may still be a by-product of some other process.

It may be seen, then, that the present status of knowledge of the cause of multiple sclerosis is not very satisfactory. Part of the confusion may be due to uncertainty as to whether multiple sclerosis is really a disease entity, with one single cause, or whether it is a syndrome which may be produced in a variety of ways. It seems likely that some of the studies described, when carried further, may help to clarify this phase of the matter. Moreover, some experimental data concerning the disease have been obtained, and it is interesting to evaluate the general trends that they indicate. Is there anything in common between these various endeavors?

They do, in united fashion, emphasize the growing belief that there is little general evidence in favor of an infectious origin for multiple sclerosis. The usual absence of fever except in acute cases, the absence of evidence pertaining to contagion and the lack of any convincing indications of infection on microscopic study of the lesions all form a background for this trend—a belief which has been stressed by others in this country, notably by Hassin. Even the occasional out-

break of multiple sclerosis after a general infection must be interpreted with reserve. The explanation may well be that the infection merely excites the process, without causing it, just as trauma may do. Certainly it is common to see exacerbations, in well established cases, after incidental infections or trauma. Also, some of the approaches furnish support for the idea that a toxemia, operating by one mechanism or another, is at least capable of explaining the diffusely scattered lesions of the disease.

In what manner may the lipolytic investigations be related to the others? Some very general theoretical statements about this can be made. As has been stated, Putnam recently reported the finding of thrombi in many of the smaller vessels close to plaques. If Putnam's observations and conceptions find substantiation, the causation of the thrombi has yet to be explained. But Weil has pointed out that many different toxins, which are at the same time hemolytic, may cause demyelination of nerve fibers, as tested by the rat cord immersion method. It is not impossible that the lipolytic material with which Weil, Crandall, Cherry and I have been working is active not only on the myelin sheath but also on the erythrocytes. Conceivably such erythrocytic alteration could lead to the formation of Putnam's thrombi.

Some additional recent work has been related only indirectly, if at all, to the pathogenesis of multiple sclerosis. It is more directly concerned with serologic and blood chemical factors, in their relation to activity of the disease as contrasted with inactivity.

Sachs and Steiner<sup>6</sup> have announced the discovery of a complement fixation test for multiple sclerosis which is comparable to the Wassermann reaction. The facts appear to be impressive, and if the results are confirmed an extremely important step will have been made in the advance on the disease. It would not necessarily mean that the disease is a spirochetal or even an infectious one, but it would serve as a quick and convenient method of diagnosis and of estimating activity or inactivity of the disease. It could also be used as a check on therapeutic procedures. For all these reasons it would be a most useful tool in the further investigation of the etiologic factors responsible for the disease. The relations between the lipolysis studies and the complement fixation reaction would also require elucidation.

The most recent phase of the work on lipolytic action has been concerned with the changes occurring in the blood during remission.<sup>21</sup> A new technic has been employed, and it is probable that we are working with a different lipolytic agent than before. In these experiments the results can be summed up as follows:

1. The agent has been proved to be enzymic in character. Since the substrate used was an ester (methyl butyrate) the enzyme is an esterase.

2. In active multiple sclerosis the degree of serum esterase activity is low. (Clinical activity of the disease is estimated in the following empirical manner: minimal activity is existent if there has been at least one new symptom within the previous four months and this new symptom has not improved; a case is inactive if there have been no new developments within four months or if all the symptoms have improved and there have been no concomitant regressions in that interval.)

3. During inactivity the degree of serum esterase activity is high.

4. It appears to be true, although the definite assertion cannot be made at this time, that the action is

19. Weil, Arthur, and Crandall, Lathan: Die Beziehungen zwischen Lipasehalt und der neurotoxischen Wirkung des Serums nach experimenteller Leberschädigung. *Ztschr. f. d. ges. Neurol. u. Psychiat.* **140**: 572, 1932.

20. Karady, I.: Studies on the Lipase Contents of the Duodenal Juice and the Serum in Multiple Sclerosis. *Orvosi hetil.* **78**: 394 (May 5) 1934.

21. Brickner, Richard: Blood Esterase Changes Associated with Clinical Activity and Inactivity in Multiple Sclerosis. *Bull. Neurol. Inst.* to be published.

greatest at the beginning of inactivity and is gradually reduced as inactivity continues. At all events it rarely, if ever, reaches the low range shown by active cases.

5. In a few cases studied during activity, and again after inactivity had begun, the indicated change was quite abrupt.

6. The experiments show that the presence of a small amount of quinine hydrochloride in the flask containing the serum and the ester stimulates the action of the esterase. Thus, the first actual experimental support for quinine therapy in multiple sclerosis is obtained.

7. The observations may be useful

A. In improving one's knowledge of what happens during remissions. It is quite possible that the high esterase value is connected with the repair of injured myelin.

B. As a test of activity of the disease.

C. As a standard by which to evaluate therapeutic investigations.

#### CONCLUSION

It seems fair to say that there is enough information at hand even now to justify the hope that investigators are heading in similar directions and that union and solution may not be too far distant.

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## FRACTURES OF THE PATELLA

### RESULTS OF TOTAL AND PARTIAL EXCISIONS OF THE PATELLA FOR ACUTE FRACTURE

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It is our purpose in this paper to present a new conception of the treatment of the acute fracture of the patella. The ideas herein set forth have been used in a sufficient number of instances in a large charity service and in the private practice of one of us (W. E. B.) to warrant our bringing them to the attention of those treating this type of injury.

That the treatment of fractures of the patella is still open for discussion is attested by the number of procedures recently devised for dealing with the condition. It is noteworthy that all the newer methods aim at a more rapid restoration of the patient to economic usefulness.<sup>1</sup>

Following the lead of Gallie and LeMesurier,<sup>2</sup> procedures using fascial transplants have been described by Allen,<sup>3</sup> Haggart,<sup>4</sup> and Leavitt.<sup>5</sup> They all involve the preparation of another operative field to obtain the transplant but in hands of the aforementioned writers are productive of good results. Ober<sup>6</sup> uses narrow strips of the aponeurosis of the extensor tendon above the proximal fragment, where they are secured and then passed longitudinally through drill holes in the upper fragment and attached to the periosteum of the lower

fragment and the patellar ligament. Anderson<sup>7</sup> proposes a pin method combined with opening of the fracture site to remove clots and prolapsed patellar capsule.<sup>8</sup> Recent textbooks do not mention the management advocated by any of these authors but confine their descriptions to the older methods of open reduction and suture of the fragments<sup>9</sup> or cerclage with silk.<sup>10</sup> The older treatment<sup>11</sup> of open reduction with drilling and suture of the fragments by wire, kangaroo tendon, or catgut are in standard use<sup>12</sup> and have been unchanged essentially for nearly seventy years.<sup>13</sup> The fragments of the patella are drilled transversely or longitudinally and are held in place by silver wire,<sup>14</sup> phosphobronze wire,<sup>15</sup> and various absorbable materials.<sup>16</sup> The fragments are sometimes held in place without bony fixation,<sup>17</sup> or by cerclage.<sup>18</sup> With a small comminuted lower portion, the proximal fragment may be drilled longitudinally, a kangaroo tendon placed in the patellar ligament about the distal comminuted area and this drawn up through the drill holes and tied at the proximal end of the large fragment.<sup>19</sup> This method proposed by Thompson is a good treatment and excisions of the lower fragment are discussed later.

Old fractures of the patella, if the fragments cannot be readily freshened, approximated and sutured,<sup>20</sup> are the subject of ingenious operative procedures requiring better than average surgical skill.<sup>21</sup> We suggest that the removal of the upper fragment or of the whole patella in these cases with the fashioning of a new extensor tendon from adjacent quadriceps fascia might be as efficient and is surgically a less formidable undertaking.<sup>22</sup>

We are not concerned here with the problem of the treatment of the acute fracture of the patella when open reduction is contraindicated.<sup>23</sup>

7. Anderson, Roger: An Ambulatory Method of Treating Fractures of the Patella, *Ann. Surg.* **101**:1082 (April) 1935.

8. Gem, W.: Probable Cause of Nonunion of Fracture of the Patella, *Brit. M. J.* **2**:431, 1883.

9. Callander.<sup>20</sup> Davis, G. G.: Applied Anatomy, Philadelphia, J. B. Lippincott Company, 1929, pp. 541-548. Key, J. A., and Conwell, H. E.: The Management of Fractures, Dislocations and Sprains, St. Louis, C. V. Mosby Company, 1934. Wakeley, C. P. G., and Hunter, J. B., in Rose and Carless's Manual of Surgery, New York, William Wood & Co., 1930, pp. 619-623.

10. Bohler, Lorenz: The Treatment of Fractures, Baltimore, William Wood & Co., 1935, p. 367.

11. Groves.<sup>18</sup> Power, D'Arcy: Lister and Wiring the Patella: Ipsissima Verba, *Brit. J. Surg.* **21**:557 (April) 1934. Turner, Philip: Fracture of the Patella Treated by Wiring by Sir Henry Howse Thirty-Eight Years Ago, *Guy's Hosp. Rep.* **77**:238 (April) 1927. Turner, G. R.: Case of Ununited Fracture of the Patella Treated by Suture of the Fragments, *Brit. M. J.* **2**:974, 1883.

12. Bickham.<sup>20</sup> Burghard, F. F.: Operations for Fracture of the Patella, in Oxford Loose Leaf Surgery, New York, Oxford University Press (supp.) 1926, vol. 2, pt. 1, pp. 64-77. Cotton, F. J.: Patella Fracture, in Lewis, Dean: System of Surgery, Hagerstown, Md., W. F. Prior Company **2**:143-147, 1928. Eliason and Hinton.<sup>41</sup>

13. Lister, Joseph: A New Operation for Fracture of the Patella, *Brit. M. J.* **2**:850, 1877.

14. Higgins, T. T.: Fracture of Both Patellae by Muscular Action, *Brit. M. J.* **1**:1006 (May 30) 1925.

15. Groves, E. W. H.: Material and Technique of Wire Suture of Bone, *Lancet* **2**:945, 1912.

16. Jones, R. W.: Fractures Involving the Knee Joint, *Canad. M. A. J.* **24**:803 (June) 1931.

17. Barham, F. W.: Fracture of the Patella, *S. Clin. North America* **2**:1307 (Oct.) 1922.

18. Magnusson, P. B., and Coulter, J. S.: Fractured Patella, *Internat. Clin.* **2**:148, 1921. Scudder and Miller.<sup>20</sup> Whiteclay, R. H. A.: The Treatment of Fractures of the Patella, *Proc. Roy. Soc. Med.* **16**:111 (Oct.) 1923.

19. Thompson, J. E. M.: Comminuted Fractures of the Patella, *J. Bone & Joint Surg.* **17**:431 (April) 1935.

20. Bickham, W. S.: Operative Surgery, Philadelphia, W. B. Saunders Company, 1924, vol. 2, pp. 372-380, p. 420.

21. Albee, F. H.: Bone Graft for Fracture of the Patella, *Internat. Clin.* **2**:224 (June) 1928. Brickner, W. M.: Free Muscle-Tendon-Bone Transplantation for Old Fractures of the Patella, *Surg., Gynec. & Obst.* **24**:749 (June) 1917. Henderson, M. S.: The Use of Beef Bone Screws in Fractures and Bone Transplantation, *J. A. M. A.* **74**:715 (March 13) 1920. Lane, W. A.: The Use of Screws and Plates in the Operative Treatment of Fractures, *Practitioner* **85**:610, 1910.

22. Speed, Kellogg: A Textbook of Fractures and Dislocations, Philadelphia, Lea & Febiger, 1928, pp. 736-758.

23. (a) Hertzler, A. E.: A Pin Method for the Approximation of the Fragments in Fractured Patella, *Surg., Gynec. & Obst.* **32**:273 (March) 1921. (b) Roberts, J. B.: Bony Union of Transverse Fracture of Both Patellae Without Operative Suture, *Ann. Surg.* **64**:116, 1916; (c) Subcutaneous Fixation of Transverse Fractures of the Patella, *ibid.* **74**:105, 1921.

From the Department of Orthopedic Surgery, the Receiving Hospital, Detroit.

1. Scudder, C. L.: The Open or Operative Treatment of Fresh Fractures, Boston M. & S. J. **142**:289, 1900.

2. Gallie, W. E., and LeMesurier, A. B.: The Late Repair of Fractures of the Patella and Rupture of the Ligamentum Patellae and the Quadriceps Tendon, *J. Bone & Joint Surg.* **9**:47 (Jan.) 1927.

3. Allen, A. W.: Fractures of the Patella, *J. Bone & Joint Surg.* **14**:640 (July) 1934.

4. Haggart, G. E.: Fracture of the Patella, *S. Clin. North America* **12**:773 (June) 1932.

5. Leavitt, P. H.: Fascial Strips in Patellar Fractures, *New England J. Med.* **203**:728 (Oct. 9) 1930.

6. Ober, F. R.: A New Operation for Fracture of the Patella, *J. Bone & Joint Surg.* **14**:640 (July) 1932.

We have not seen a frontal fracture of the patella.<sup>24</sup> Fractures of the patellar border without displacement,<sup>25</sup> longitudinal fractures,<sup>26</sup> certain stellate fractures and transverse or oblique cracks without displacement of the fragments are treated by us with a walking-iron cast to the mid thigh and immobilized in extension for from six to eight weeks. No record of these cases is included in this paper. Compound fractures<sup>27</sup> are treated conservatively until infection has cleared and then sutured or excised, depending on the operator. Simultaneous bilateral fractures of the patella<sup>28</sup> occurred in five of our cases and are summarized in table 4.

All the methods previously referred to for the open reduction of the patella contemplate the accurate reposition of the fragments and their fixation by various means with longer or shorter periods of immobilization, depending on the operator and the type of procedure used. Bony union is the criterion of success, although close fibrous union is usually functionally as efficient.<sup>22</sup> The patella, of all bones, is the most susceptible to refracture.<sup>29</sup> It is important and sometimes difficult to get exact reposition of the posterior articular surfaces of the fragments.<sup>30</sup> When a foreign body such as wire is introduced for suture material, this must sometimes be removed, and it may cause rarefaction of the bone.<sup>31</sup> Adhesions to the femur sometimes complicate the end result.<sup>32</sup>

TABLE 1.—Age Distribution of the Patients in a Series of Fifty-Five Fractured Patellas

Age	Cases
11 to 20.....	2
21 to 30.....	9
31 to 40.....	16
41 to 50.....	13
51 to 60.....	11
61 to 70.....	4

To obviate these difficulties, the method of subtotal resection of the patella or, when indicated, total excision of the patella is proposed. Briefly we advocate the excision of the upper fragment or fragments in those cases in which there is a sizable lower fragment left for attachment of the quadriceps tendon and aponeurosis. In those instances in which the patella has been markedly comminuted with wide separation of the fragments and a sizable lower fragment is not left, we advise the removal at once of the whole patella.

Neoplasms and granulomas of the patella have been dealt with by excision<sup>33</sup> but as far as we know partial or total excisions of the patella have never been advocated as primary measures in the acute fracture. Heinech<sup>33</sup> quoted a series of twenty-one excisions of the patella for various disorders and seven of these were com-

minuted fractures. He strongly opposed the excision of the kneecap on cosmetic and functional grounds and lamented the loss of protection to the knee joint. The foregoing series were from the literature up to 1909.)

The rationale of the removal of the upper fragment or fragments of the patella for acute fracture calls for some discussion. Although the end result of the removal of the lower fragment was excellent in two of three cases in which this operation was performed and the end result in the remaining case was unknown, we do not think that the removal of the upper fragment of the patella is a wise procedure. The extensor apparatus of the knee is composed of the quadriceps extensor group of muscles, the patella and the patellar ligament. The patella itself, owing to its attachment to the inelastic patellar ligament, moves very little if any proximally or distally in movements of the knee joint. Furthermore, the apex of the patella is embedded in the patellar ligament and in the infrapatellar fat pad. Thus the lower end of the bone is fixed and is analogous to the olecranon process of the ulna in this regard. On the other hand, the base of the patella receives the insertion of the rectus femoris tendon and the tendon of the lateral vastus muscle. Muscle fibers and aponeurosis of the medial vastus muscle and the medial and lateral retinacula patellae are likewise inserted into its medial and lateral borders respectively and form the walls of the knee joint capsule. In any operation for fracture of the patella, whether it is excision or some one of the suturing procedures, it is imperative that we be very careful to suture the lateral and medial rents in the knee joint capsule. The success or failure of this one factor will determine the difference between a fair result and one that is excellent.<sup>34</sup> Provided then that one has been careful to suture the tears in the knee joint capsule up to the sides of the patella, it can matter little if one removes the fragments above the line of fracture and the suture line in the capsule. We do this instead of attempting a doubtful repair with drilling of small fragments or encircling them with the likelihood of getting only a fair anatomic result and often one which does not lead to bony union.<sup>35</sup>

The patella glides on its posterior surface on the intercondylar notch of the femur and is interposed between the extensor muscles and the patellar ligament, helping as it were to guide the extensor action from the thigh to the anterior tubercle of the tibia. The results of the removal of the upper third, upper half, or upper two thirds of the patella or, in fact, the whole patella with suitable indications, would not be productive of serious consequences. In kneeling,<sup>36</sup> the pressure comes on the patella and the anterior tibial tubercle and in partial removal of the patella, even up to two thirds, the protection to the knee joint from knee-high objects could hardly be said to be lost. If the patella is removed, of course, the condyles of the femur and the tibial condyles are somewhat more exposed to direct trauma than formerly. By sharp dissection close to the bone, the extensor apparatus is preserved for attachment to the patellar ligament when a total excision operation has been performed or for attachment to the fascia and periosteum in front of the remaining fragment, where a subtotal excision has been done.

Interrupted sutures are used throughout, as it is felt that the mattress suture produces a dehematization of

24. Kleinberg, Samuel: Vertical Fractures of the Articular Surface of the Patella, J. A. M. A. 81: 1205 (Oct. 6) 1923. Stewart, S. F.: Frontal Fractures of the Patella, Ann. Surg. 81: 536 (Feb.) 1925.  
25. Salmond, R. W. A.: The Recognition and Significance of Fractures of the Patellar Border, Brit. J. Surg. 6: 463 (Jan.) 1919.  
26. Lapidus, P. M.: Longitudinal Fractures of the Patella, J. Bone & Joint Surg. 14: 351 (April) 1932.  
27. deTarnowsky, George: Compound Fractures of the Patella, Am. J. Surg. 27: 229, 1913.  
28. Roberts<sup>28</sup> Steinke.<sup>29</sup> White, R. J.: Report of a Case of Bilateral Fracture of the Patella, South. M. J. 19: 750 (Oct.) 1926.  
29. Corner.<sup>30</sup> Speed.<sup>31</sup>  
30. Scudder, C. L., and Miller, R. H.: Certain Facts Concerning the Operative Treatment of Fractures of the Patella, Boston M. & S. J. 175: 441 (Sept. 28) 1916.  
31. Wakeley, C. P. G.: Fractures of the Patella and Their Treatment, Practitioner 122: 238 (April) 1929.  
32. Cokkinis, A. J.: Fractures of the Patella, Practitioner 127: 185 (July) 1931.  
33. Heinech, A. P.: Modern Operative Treatment of Fractures of the Patella, Surg., Gynec. & Obst. 9: 177, 1909. Ludloff: Resection of the Patella for Better Functioning in Knee Affections, Zentralbl. f. Chir. 52: 786 (April 11) 1925; abstr. J. A. M. A. 84: 1707 (May 30) 1925.

34. Higgins.<sup>34</sup> Rixford, Emmet: Fracture of the Patella, S. Clin. North America 6: 327 (April) 1926.  
35. Corner, E. M.: Fractures and Refractures of the Patella, Ann. Surg. 52: 707, 1910.  
36. Callander, C. L.: Surgical Anatomy, Philadelphia, W. B. Saunders Company, 1934, pp. 969-977.



the tissues incompatible with quick healing of the extensor apparatus. In the first few cases and in an occasional later case, attempts were made to reform a "socket" of peripatellar tissue in cases of total excision of tissue from about the fragment removed to provide for the regeneration of a new patella. These "patellar-

TABLE 2.—Summary of Operations and End Results in Patients Who Had Various Suturing Procedures \*

Case	Patient	Race	Sex	Age, Years	Observed	Operation	Result
1	A. A.	White	♀	49	8 mos.	Kangaroo tendon through drill holes	Fair
2	D. B.	White	♀	33	15 mos.	2 double chromic catgut no. 2 through drill holes	Good
3	O. O.	White	♀	40	9 mos.	Kangaroo tendon through drill holes	Excellent
4	J. D.	Negro	♂	56	36 mos.	Kangaroo tendon through drill holes	Excellent
5	T. D.	White	♂	35	14 mos.	Kangaroo tendon through drill holes	Fair
6	V. G.	White	♀	27	12 mos.	Kangaroo tendon through drill holes	Excellent
7	P. Y. L.	Oriental	♂	33	16 mos.	2 double chromic catgut no. 2 through drill holes	Excellent
8	M. L.	White	♂	41	12 mos.	Capsule sutured	Fair
9	A. M.	White	♂	12	10 mos.	Capsule sutured	Excellent
10	J. M.	White	♂	62	14 mos.	Kangaroo tendon through drill holes	Fair
11	L. M.	White	♂	62	7 mos.	Kangaroo tendon through drill holes	Fair
12	G. M.	White	♀	37	34 mos.	Kangaroo tendon through drill holes	Good
13	E. O.	White	♂	65	17 mos.	Capsule sutured	Good
14	A. R.	White	♀	28	26 mos.	Kangaroo tendon through drill holes	Excellent
15	F. T.	White	♂	43	37 mos.	Kangaroo tendon through drill holes	Excellent

\* Of the total of thirty-five operated on in this manner, the results in twenty are listed as unknown, as stated in the text.

plasties" were abandoned and simple suture of the patellar ligament and extensor aponeurosis was carried out with equally good results.

The skin incision may be any one preferred by the operator provided there is adequate exposure of the whole extensor apparatus, including the lateral ligaments of the knee joint.

Following operation, it is our custom to apply a posterior mold or a cast to immobilize the knee in full extension. If the postoperative course is uneventful, passive motion is started on the ninth or tenth day and the patient is gotten out of bed. This is followed by passive motion three times daily for four days and then active motion with the patient up and about on crutches. Weight bearing is started any time after two weeks following the operation. The patient leaves the hospital with a tight flannel bandage about the knee and crutches or cane to steady him rather than to take much of his weight. From then on his recovery is rapid and most of these patients can do light work within from six to eight weeks following operation. Work requiring stair climbing or heavy manual labor is prevented by a certain amount of pain and stiffness residual in any severe knee injury. In the younger group of patients, heavy work can be done at the end of three months.

Most of the operations proposed for the suture of the patellar fragments are followed by a period of post-

operative immobilization varying from four to twelve weeks. In those more recently described procedures which involve the use of fascial transplants, there is always a question whether the fragments are going to stay in place once they have been put there and whether the transplant is going to be an effective immobilization during those early weeks when the fracture line is strained by any motion. Conversely, it is highly important to secure early motion in order that function will return as soon as possible.

During the three year period Jan. 1, 1932, to Jan. 1, 1935, there were fifty-five fractures of the patella submitted to open reduction at the Receiving Hospital. As already stated, certain fractures were treated by closed methods. Our records do not show the total number of these but we estimate it to be upward of twenty. In the whole series there were forty-four males and eleven females. Forty-eight were white, six were Negroes, and there was one Oriental. The left patella was involved in twenty-seven, the right in twenty-three, and both patellas in five. The Wassermann reaction was positive in four, negative in forty-five, and not recorded in six. An "automobile accident" was the cause of injury in twenty-six, those riding in an automobile numbering twenty-four, and those being struck by one two. Four were injured in fights or in playing ball, and the remaining twenty-five had a history of a fall.

TABLE 3.—Summary of Twenty Cases in Which Various Excision Operations Were Carried Out

Case	Patient	Race	Sex	Age, Years	Observed	Operation	Result
1	S. A.	White	♀	42	.....	Excision	Unknown
2	E. B.	White	♀	53	.....	Excision of upper fragment	Unknown
3	J. B.	White	♂	43	.....	Excision	Unknown
4	G. B.	White	♂	36	24 mos.	Excision	Excellent
5	H. C.	White	♂	51	.....	Excision of upper fragment	Unknown
6	F. D.	White	♂	65	24 mos.	Excision of lower fragment	Excellent
7	F. G.	White	♂	40	.....	Excision	Unknown
8	J. G.	White	♂	36	10 mos.	Excision of upper fragment	Excellent
9	C. H.	Negro	♂	48	.....	Excision of upper fragment	Unknown
10	R. K.	White	♂	43	7 mos.	Excision	Good, improving
11	J. K.	White	♂	18	7 mos.	Excision of lower fragment	Excellent
12	A. K.	White	♂	42	26 mos.	Excision of upper fragment	Excellent
13	P. L.	White	♂	30	7 mos.	Excision	Good, improving
14	E. M.	White	♂	57	.....	Excision of lower fragment	Unknown
15	A. M.	White	♂	27	.....	Excision of upper fragment	Unknown
16	J. N.	White	♂	59	18 mos.	Excision of upper fragment	Excellent
17	A. N.	White	♂	33	7 mos.	Excision	Good, improving
18	C. O.	White	♂	50	.....	Excision	Unknown
19	A. R.	White	♂	39	22 mos.	Excision of upper fragment	Excellent
20	W. W.	White	♂	35	6 mos.	Excision of upper fragment	Good, improving

The age groups are summarized in table 1. A general anesthetic was used in all but four, in whom spinal anesthesia was employed.<sup>10</sup>

Thirty-five of these patients were operated on by various members of the staff with the older methods of bone suture with chromic catgut or kangaroo tendon or merely suture of the capsule. Of these thirty-five, a total of fifteen returned at our request for reexamination and the end results are summarized in table 2.

Although many of the remaining twenty were observed in the outpatient department for varying periods, the end result is listed as unknown because we had not personally examined them. An excellent result was one in which the patient had essentially as useful an extremity as before operation. A good result was one in which the patient was improving with use and had nearly full flexion and only moderate difficulty in getting up and down stairs or in doing his work, if he had any. All other results were fair, there being no instances of over 50 per cent impairment of function but economic usefulness was often considerably diminished, because the patients were laborers. A straight transverse incision was used in fourteen cases, a curved<sup>37</sup> semicircular incision with the concavity downward in nineteen and with the concavity upward in one. A longitudinal incision was used once.

Twenty patients had total or partial excision of the patella; in nine the upper fragment was removed, in three the lower fragment, and in eight a total excision

TABLE 4.—Summary of Cases of Simultaneous Bilateral Fractures of the Patella

Case	Patient	Race	Sex	Age, Years	Observed	Operation	Result
1	F. D.	White	♂	65	24 mos.	Excision of lower fragment (right) No displacement, east (left)	Excellent
2	E. J.	Negro	♀	29	...	Suture capsule (right) Suture capsule (left)	Unknown
3	S. L.	White	♂	10	.....	No displacement, east (right) Suture capsule (left)	Unknown
4	J. N.	White	♂	17	....	Kangaroo tendon through fragments (right) Kangaroo tendon through fragments (left)	Unknown
5	A. R.	White	♂	29	..	Kangaroo tendon through fragments (right) Excision of upper fragment (left)	Excellent

of the patella was done. These cases are summarized in table 3. Eleven of these patients returned at our request for personal examination, the remainder being listed as unknown. A longitudinal incision was used in seven instances, a curved longitudinal incision in six and a transverse semicircular incision with the concavity downward in seven.

A review of the hospitalization required for these two series showed a substantially shorter time for the patients having excision procedures. This may be accounted for by the fact that we see no advantage in delaying operation, if the skin is clean, beyond from three to four days.<sup>37</sup>

The question of the regeneration of the patella has been of interest in view of our attempts at "patellar-plasty." Certain of the roentgenograms of the knees from which the patella had been removed sometime previously showed small scattered areas of calcium density in the region of the patellar ligament and extensor tendon. This was not taken to indicate regeneration of the patella.<sup>38</sup>

The preoperative care of these knees<sup>39</sup> consists simply of immobilization in extension by any means, it being our custom to use a posterior yucca board splint

from the toes to the mid thigh to prevent further damage to the medial and lateral knee joint capsule.

The following reports of cases are given to illustrate certain points and are typical of the whole series of total and partial excision procedures:

CASE 1.—G. B., a white man, aged 36, admitted to the hospital, Nov. 21, 1932, had fallen on his right knee, and radiographic examination revealed a comminuted fracture of the patella with separation of the fragments. At operation, November 26, the patella was removed subperiosteally. There were eleven fragments in all. The extensor tendon and patellar ligament were sutured and the lateral tears in the knee joint capsule repaired. He was given the routine postoperative care and at our request returned, Oct. 27, 1934, at which time he had full, painless flexion and extension, walked up and down stairs normally and worked at hard labor. He could raise himself from a half squatting position with the operated leg alone and he was well satisfied.

The multiplicity of fragments found in case 1 would have almost precluded drilling and suturing. The end result justifies the excision of the patella in this case for markedly comminuted fracture.

CASE 2.—P. L., a white man, aged 30, was injured when sliding to base in a ball game, and on radiographic examination of the left knee a transverse fracture of the left patella with marked comminution of the lower fragment was demonstrated. At operation, Oct. 8, 1934, four days following admission, the patella was excised and a "pocket" formed of the peripatellar tissues. The capsule of the knee joint was sutured and a cast was applied. The latter was bivalved and the patient left the hospital nine days after operation with the posterior portion in place and the foot of the cast cut off to permit his wearing a shoe. Tight flannel bandage protection alone was started on the twenty-third day after operation. The patient was reexamined, May 3, 1935, and was found to have full, painless extension against gravity and flexion to 90 degrees. He was working steadily as helper to a truckman. Radiographic examination showed removal of the patella and three small areas of calcification in the region of the patellar tendon.

In this case no regeneration of the patella was found on radiographic examination of the left knee six months after excision, and the disability following fracture of the patella and excision had practically disappeared.

The two reports to follow are presented because they are instances of simultaneous bilateral fracture of the patella,<sup>40</sup> and the patients reported for reexamination at our request (table 4):

CASE 3.—F. D., a white man, aged 65, admitted Oct. 12, 1932, had been injured in an automobile accident with fractures of both patellas. Radiographic examination revealed stellate fracture of the left patella without displacement of fragments and comminuted fracture of the right patella with considerable separation of the fragments. Clinically the patient could raise the left leg but not the right. Five days after admission the lower fragments of the right patella were excised and the left leg was put in a cast from the toes to the mid thigh. Passive motion to the right knee was started in ten days and active motion three weeks after operation. A flannel bandage about the right knee and the cast on the left leg necessitated the use of crutches during his convalescence. The cast to the left knee was removed at the end of nine weeks. At examination, Oct. 27, 1934, he had full, painless flexion and extension, he walked up and down stairs normally, and both knees were as useful as before operation.

This case illustrates an excellent result of excision of the lower fragment, but we do not now advise this procedure, as we have already stated.

CASE 4.—A. R., a white man, aged 39, fractured both patellas in a fight, and radiographic examination revealed transverse fractures of both patellas with marked separation of the fragments. At operation, July 24, 1933, nine days after admission,

37. Bertwistle, A. P.: Notes on Fractured Patella, *Lancet* 1:1349 (June 29) 1929.

38. Grubal, quoted by Speed =

39. Corrigan, F. P.: A Method for Immediate Treatment of Fractured Patella, *J. A. M. A.* 87:408 (Aug 7) 1926.

40. Steinke, C. R.: Simultaneous Fractures of Both Patellae, *Ann. Surg.* 58:510, 1913.

the upper fragment of the left patella was removed and the fragments of the right patella were drilled longitudinally for the reception of kangaroo tendons and the fragments brought up into apposition. It was felt that this case presented a unique opportunity for testing the efficacy of both the suturing and the excision method. Routine postoperative treatment was carried out relative to the left knee and a walking-iron was incorporated into the cast on the right leg before discharge from the hospital. When examined, May 3, 1935, he had painless motion of both knees and full flexion and extension on the left, 90 degrees flexion and full extension on the right. He went up and down stairs easily and held his body weight on either partly flexed extremity. There was some flexion impairment of the right knee but withal the patient had an excellent result and was well satisfied. Radiographic examination of both knees revealed little of note.

Because fractures of the patella are said not to occur under the age of 20, the following two cases are reported briefly:<sup>41</sup>

CASE 5.—J. K., a white youth, aged 18, fractured the left patella in an automobile accident, and radiographic examination revealed an evulsion type fracture of the lower pole of the left patella with separation of 1 inch (2.5 cm.). At operation, May 3, 1934, some three weeks after admission (the operation was delayed because of the patient's general condition, he having suffered extensive lacerations about the face and the loss of ten teeth), a fragment 2 by 2 cm. was removed from the patellar ligament and the ligament repaired. Routine post-operative care as previously outlined was carried out and when examined, October 27, the patient had full flexion and extension of the affected extremity and he walked up and down stairs normally.

CASE 6.—A. M., a white boy, aged 12 years, fell off a porch, injuring the right knee. Radiographic examination revealed an oblique fracture through the middle of the right patella with slight separation of the fragments. The patient could not raise the right knee off the bed, so injury to the lateral ligaments was suspected and operation was advised. At operation, Dec. 23, 1933, four days after admission, the capsule of the knee joint was found to be intact, and no injury to the patellar capsule was found. The patellar capsule over the fracture site was strengthened with a few interrupted sutures, and a plaster mold was applied. Examination, Oct. 27, 1934, revealed a normal knee function, and the parents were well satisfied.

The study of the method of treating fractured patellas as herein outlined is being continued, and several fresh cases have been treated surgically since Jan. 1, 1935. These have in many instances not been followed for a sufficient length of time, however, to evaluate the end results.

#### CONCLUSIONS

1. A new conception of the treatment of acute fractures of the patella, total and partial excisions of the patella, is productive of excellent clinical results and is justified in the light of the functional anatomy of the knee joint.

2. When the patella is markedly comminuted, subperiosteal excision is done at once. When there is a sizable distal fragment, the proximal fragment is excised. Excision is the simplest procedure when the distal portion is markedly comminuted.

3. The question of nonunion or of fibrous union of the patella or of adhesions to the femur never arises.

4. The operator may choose his incision provided exposure is adequate to investigate and repair the tears in the knee joint capsule.

5. The length of hospitalization in our series was substantially less than that for the series treated by older methods.

6. The patella does not regenerate following excision.

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41. Elason, E. L., and Hinton, Drury (collaborator): Fractures of the Patella, in *Nelson's Loose Leaf Living Surgery*, New York, Thomas Nelson & Sons 3: 372-374, 1927.

## VESICO-INTESTINAL FISTULAS, CAUSED BY FOREIGN BODIES IN THE BOWEL

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AND

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The number of cases of vesico-intestinal fistulas reported in the literature is considerable, most of the cases being due to diverticulitis and a malignant condition. A fair number are caused by the rupture of an appendicele or pelvic abscess into the bladder with a resultant fistula. Trauma, serious bowel infections, tuberculosis, actinomycosis, syphilis and bilharziasis play a small rôle in the etiology.

Fistulas between the bowel and the bladder caused by foreign bodies in the bowel are quite unusual.

#### REVIEW OF THE LITERATURE

In a review of the literature it has been difficult to cull out these cases, owing to the fact that the cause of the fistula is frequently not stated; also in many of them it has been impossible to determine whether the foreign body that produced the fistula was introduced into the bladder or whether it was ingested. There are quite a number of reports of cases in which the fistulas were produced by bladder calculi ulcerating into the bowel, particularly the rectum. These will not be considered in this discussion. Morrissey, in a comprehensive review of the subject of vesico-intestinal fistulas, states that "the location of the opening in the intestinal canal is most common in the rectum, the next most common in the sigmoid and the least are in the small intestine and cecum."

Kingdon<sup>1</sup> in 1842 reported a fistula between the bowel and the bladder, produced by the passage of a needle from the appendix into the bladder. Autopsy showed that a needle was the nucleus of a large stone.

Roberts<sup>2</sup> reported the case of a man, aged 47, from whom a stone was removed by perineal cystotomy. The nucleus of the stone was found to be a piece of a slate pencil which the patient had swallowed six months previously.

McWhinnie,<sup>3</sup> cited by Cripps, reported the case of an old man, a physician, who for nine years had passed gas and occasional feces from the urethra during urination; no urine was passed from the rectum. In April 1849 he had passed a partridge bone by way of the urethra. He had recurrent attacks of intestinal obstruction and died of ileus and secondary peritonitis in 1862, after an illness of many years. In this case the shape of the bone was not described and it might have been introduced into the bladder and produced the fistula.

Guterbock<sup>4</sup> reported a case of gallstones passed in the urine. He made four lithotripsies and removed 13 Gm. of gallstones. The manner in which they reached the bladder was not stated. He cited the case of Faber and Kostlin: A man, aged 35, passed gallstones in the urine at intervals. He died at the age of 62. The gallbladder was connected with the urachus. Kostlin cited a case of G. Pelletan, whose patient,

1. Kingdon, W. D.: *Tr. Province M. & S. A.*, London 10: 198-202, 1842.

2. Roberts, A.: *M. Times & Gaz.*, London 40: 113, 1859.

3. McWhinnie, A. M.: *M. Times & Gaz.*, London 1: 28, 1863.

4. Guterbock: *Gallenstein Konkreme in der Harnblase*, *Virchows Arch. f. path. Anat.* 66: 273, 1876.

aged 26, passed many gallstones in the urine. (Michel, 1909, and McDonald, 1924, also reported finding gallstones in the bladder.)

Fleury<sup>5</sup> described the case of a man with symptoms of vesical stone who was found to have a rectovesical fistula. Gas was passed with the urine. On cystotomy a shoemaker's awl, which was coated with urinary salts, was removed. The awl had been inserted into the bladder fifteen years prior by a companion.

A man, aged 35, with pulmonary tuberculosis, accidentally swallowed a needle 3 cm. long. This passed from the rectum into the bladder so that the head was in the rectum and the point in the bladder. It was coated with phosphatic salts. The patient died of tuberculosis.<sup>6</sup>

Flaubert<sup>7</sup> reported the finding of a bone in the bladder; no details were given.

Harrison<sup>8</sup> reported the case of a man, aged 50, who had had intestinal irritation for several months and had passed feces and gas at each urination for three weeks. A hard tumor the size of a cricket ball was felt in the fundus of the bladder; this proved to be the femur of a rabbit, which had passed from the intestine into the bladder. A bean-sized mass, which was the expanded end of the rabbit's femur, was passed by way of the urethra. He received medical care but the fistula persisted. Harrison also reported the case of a sailor who had symptoms of vesical stone. The whale-bone mouthpiece of a pipe was found in the bladder on cystotomy. The patient stated that the pipe stem had been swallowed a long time before; however, since it still had the odor of tobacco, the patient's veracity might safely be questioned.

Benham<sup>9</sup> reported the case of an insane person who inserted an umbrella rib into the urethra, which passed through the apex of the bladder into the duodenum; the part of the rib that was in the bladder was incrustated. No symptoms appeared for two years, and the patient died of peritonitis. Some of the details of this case are lacking.

Arthur<sup>10</sup> reported the case of a woman, aged 45, who had swallowed a pin eleven years before. Great pain developed in the lower part of the abdomen which lasted for several weeks, and there were blood and feces in the urine. Assisted by her husband, the pin was removed from the urethra. A laparotomy was performed, and since it was impossible to separate the uterus, bladder and bowel, the incision was closed. She showed some improvement.

Keen<sup>11</sup> reported the case of a man, aged 24, who had had dysuria since the age of 7 years, at which time the family doctor had removed a pin from the urethra. There was no history of the swallowing or insertion of a pin. At 23 he was thought to have a rectovesical fistula, secondary to the rupture of a prostatic abscess. Two attempts to close the fistula were unsuccessful. A laparotomy was performed, and a long appendix attached to the bladder wall was found; this was separated from the bladder and removed. The patient made an uneventful recovery.

Rautmann<sup>12</sup> reported the case of a multipara, aged 21, who swallowed a hairpin, which was later found in the bladder. This was removed and the patient was cured. The question arises as to whether she swallowed the hairpin or not.

Von Hacker<sup>13</sup> reported the case of a man, aged 51, who had an aerometer pass from the intestine into the bladder, which was later removed. It had been swallowed by the patient five weeks before. Two years later he swallowed a piece of wood, which was likewise removed from the bladder. Here again is the question of the route of entrance into the bladder.

Paul<sup>14</sup> reported the finding of a long cylindric stone in a bladder, the stone having a sewing needle (1.5 cm. long) as its nucleus. The presumption was that the needle had been swallowed and had ulcerated through the intestine into the bladder. This is also doubtful.

Jacomet<sup>15</sup> reported the finding of a pencil 7.5 cm. long, which had been introduced through the anus, in the bladder of a 12 year old child. The patient had a rectovesical fistula. Suprapubic cystotomy was performed, the bladder drained and the patient cured.

Exner<sup>16</sup> reported the case of a woman, aged 54, who was operated on for tumor of the bladder vertex. An inflammatory mass containing a wood splinter 2 cm. long was found; this had perforated from the intestine into the bladder.

Kapsammer<sup>17</sup> operated on a patient for an incrustated tumor mass and found an incrustated bone. One year later he found an incrustated fecal stone in the same place.

Mirabes<sup>18</sup> reported the case of a patient who put a glass tube into the rectum, which wandered into the bladder. This tube was 15 cm. in length and had been used sixteen months previously and left in the rectum. Symptoms of pain and distress developed in the bladder, and pus and blood appeared in the urine. The tube was removed and the patient was cured.

Parham and Hume<sup>19</sup> in a review of the literature on vesico-intestinal fistulas, reported a case in which a pin had been swallowed eleven years before.

Pakowski<sup>20</sup> reported the case of a woman, aged 36, who complained of pain in the bladder of six months' duration. A calculus was found in the bladder, which had formed around one end of a crochet needle; the needle had been introduced three and one-half years before and had perforated through into the intestine. At operation part of the needle was found in the bladder and part in the intestine. There was no gas or feces passed in the urine. The patient was discharged as cured.

Bond<sup>21</sup> reported the case of a sailor in whom the following articles were found in the bladder: from eighty to ninety nails weighing 350 Gm., 20 Gm. of cobblers' nails and carpet tacks, one roofing nail, several pieces of glass three-fourths inch long and one-half inch in width, bits of stone, enamel from a tooth, a

12. Rautmann: Haarnadel in der Blase, Sitzungsber. d. gynäk. Gesellsch., 1899.

13. von Hacker: Verschluckter Prozentaerometer in der Blase eines Mannes, 1901.

14. Paul, cited by Monaschkin, G.: Ztschr. f. urol. Chir. 19: 87-94, 1926.

15. Jacomet: Bull. et mém. Soc. de chir. de Paris 30: 696-699, 1904.

16. Exner: Ein der Blasenwand um einen Fremdkörper, Wien.

17. Kapsammer: ein Hühner Knochen War, Wien. klin. Wchnschr., 1906.

18. Mirabes, cited by Monaschkin, G. B.: Spontanerwundung eines gläsernen Mastdarmrohres in die Blase, Ztschr. f. urol. Chir. 19: 87, 1926.

19. Parham, F. W., and Hume, J.: Ann. Surg. 50: 251-286, 1909.

20. Pakowski: Bull. Soc. anat. de Paris 14: 373-375, 1912.

21. Bond, S. P.: Foreign Bodies in the Bladder, J. A. M. A. 83: 1163 (Oct. 11) 1924.

5. Fleury: Bull. Soc. de chir. de Paris 4: 39, 1878.

6. Dittel: Wien. med. Wchnschr. 31: 221, 1881.

7. Flaubert: Ueber Knochenfragmente als Fremdkörper in den Harnwegen, Dissertation, Strassbourg, 1881, p. 64.

8. Harrison, Reginald: Liverpool M.-Chir. J. 4: 1884; Lancet 1: 287, 1885.

9. Benham: Glasgow M. J., 1886.

10. Arthur, C. S.: Enterovesical Fistula Caused by the Migration of a Swallowed Pin, Fort Wayne M. J. & Mag. 17: 129-130, 1897.

11. Keen, W. W.: Appendicitis: Urinary Fecal Fistula, Tr. Am. S. A. 16: 243, 1898.

carpal bone of a small animal and two 3-inch screws. At autopsy there was found a walled off perforation of the ileum in which eight tacks were found. A recent perforation of the sigmoid into the left side of the bladder was also found. The patient stated that he got drunk and swallowed these articles!

Schwarz<sup>22</sup> reported the case of a female who swallowed a pin, which was removed from the bladder. In 1931 he also reported a case of a crochet needle in a bladder, with a secondary perforation.

Lower and Farrell<sup>23</sup> reported the case of a man, aged 26, who had had a stone with a pin nucleus removed from the bladder in 1925. His mother stated that the pin had been swallowed when he was 6 months old. He had had bladder stones for eight years. Cystoscopic examination revealed an opening in the upper part of the bladder. Lower performed a suprapubic operation and the appendix was found adherent to the dome of the bladder; the vesico-intestinal fistula was in all probability due to the pin swallowed by the patient in infancy, which had lodged in the appendix and perforated into the bladder.

Nesbit and Collier<sup>24</sup> reported the case of a girl, aged 13 years, who ten years prior to entrance into the hospital had had a cystotomy with removal of a bladder stone. A vesico-intestinal fistula was also found. Embedded in the stone was a pin which had caused appendicitis, and the appendix had become adherent to the bladder, ruptured into it and formed the fistula.

These two cases, and those reported by Keen and Kingdon, are the only cases of vesico-intestinal fistulas produced by foreign bodies passing from the appendix to the bladder that were found.

In all probability the twenty-eight cases reviewed here do not represent every case of foreign body producing vesico-intestinal fistula, but the review is helpful not only in showing that the condition is uncommon but also in giving one an idea of the various ways in which foreign bodies produce this condition.

#### REPORT OF CASE

To these reported cases we add a somewhat detailed report of a case in the urologic service of the Presbyterian Hospital.

A man, aged 65, for six months prior to admission had been disturbed by frequency and urgency, having to urinate about every hour, day and night. This was associated with severe pain in the lower part of the abdomen and pain in the bladder at the end of urination. He had repeated attacks of chills and fever. The urine was cloudy and often contained blood. He had lost about 35 pounds (16 Kg.) in the past six months. He never had had any roaring in the bladder or escape of gas from the urethra. A large fixed mass, about the size of a grapefruit, could be palpated in the median line above the pubis. The prostate was only moderately enlarged, grade 1, soft, smooth, symmetrical and not fixed. There was no residual urine. The urine was found crowded with pus and blood and on culture grew gram-negative rods and gram-positive cocci, and the plate was overgrown with *Bacillus proteus*. The blood chemistry was normal, the phenolsulfonphthalein output was 87 per cent in two hours, and the Wassermann reaction was negative. A flat plate of the urinary tract showed slight liping of the lumbar spine but otherwise was negative.

A cystogram showed a slightly irregular outline of the bladder and multiple phleboliths. Fluoroscopy of the chest was negative. A barium sulfate enema and fluoroscopy showed that a column of barium entered the rectum and rectosigmoid rapidly. In the middle of the sigmoid a filling defect was seen with a small channel leading from the margin of the intestine, suggesting a fistulous tract. Films confirmed the fluoroscopic observations. Examination of washings from the bladder following the barium enema was negative for barium sulfate.

On cystoscopic examination the bladder was markedly injected throughout. There was only a slight intrusion of the prostate into the bladder. A foreign body was seen lying on the floor of the bladder, which was about 4 cm. in length, 0.5 cm. in width, pointed at one end and black. When grasped with a rongeur forceps pieces broke off, but we finally succeeded in removing it. On examination it was found to be vegetable matter.

A brown spot was seen on the posterior wall of the vertex of the bladder. This was surrounded by an edematous area,

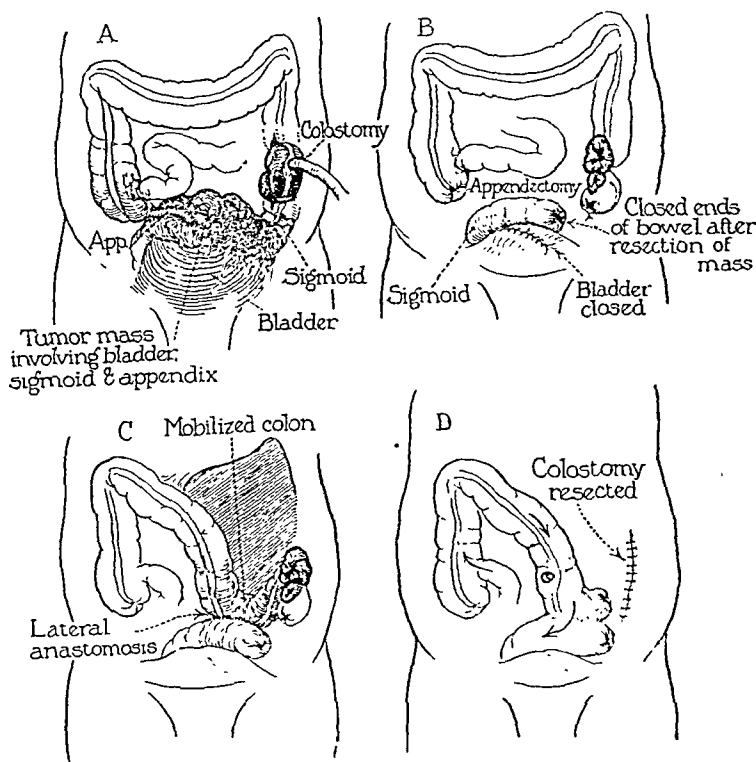


Fig. 1.—Steps in the operative procedure.

and a small depression was seen in the center, the usual appearance of the bladder end of a vesico-intestinal fistula.

Attempts to pass a catheter into the center of this area failed. Sodium iodide solution introduced into the bladder could not be visualized in the intestine.

Before we approached this case surgically we were uncertain as to the nature of the pathologic condition but considered it most likely a carcinoma of the sigmoid colon or a chronic diverticulitis. The loss of 35 pounds and the nodular feel of the large suprapubic mass suggested a malignant growth, but the general well being of the patient, the absence of blood in the stools and the presence in the x-ray film of small diverticula spoke very strongly for a chronic benign process.

June 13, 1934, the abdomen was opened through a left paramedian incision and thoroughly exposed. There was a firm nodular tumor mass the size of a man's two fists involving the sigmoid colon and the dome of the urinary bladder, and firmly adherent to its wall were several loops of small intestine and a large thick-walled appendix. It had the gross appearance and feel of a carcinoma, yet it was not possible to be sure that it was not a diverticulitis, because the liver was smooth and no enlarged glands could be felt in the mesentery. It seemed questionable whether the mass was resectable, but in view of the severe contamination of the urinary tract a clear indication

<sup>22</sup> Schwarz, in discussion on Perlmann, S.: *Ztschr. f. Urol.* 21: 42, 1927.

<sup>23</sup> Lower, W. E., and Farrell, J. I.: *Ann. Surg.* 93: 623 (Feb.) 1931.

<sup>24</sup> Nesbit, R. M., and Collier, F. A.: *Am. J. Surg.* 25: 536-538 (Sept.) 1934.

existed for sidetracking the fecal current above this level. Through a separate muscle-splitting incision, therefore, a left inguinal colostomy was made and the rectus incision closed. Figure 1A illustrates diagrammatically the situation at the close of the first operation.

The patient recovered nicely from this procedure, and his progress was rapid. The colostomy functioned well, the urine cleared rapidly, and his appetite improved steadily. July 30 (six weeks after the first operation) the abdomen was reopened through a right paramedian incision. The adherent loops of intestine were easily separated, and a resection of this large tumor mass was carried out, including with it the appendix and upper third of the bladder. The opening in the bladder was closed with a double row of catgut, the sigmoid colon just distal to the tumor was closed with a purse string, and the resection carried proximally almost up to the colostomy. Figure 1B represents the operative field at the closure of the second procedure. When the specimen was opened after removal, much to our surprise the tumor was found to be made up of a chronic, very thick-walled fistulous tract between



Fig. 2.—Appearance of tumor of sigmoid with communication with the bladder, caused by a chicken bone: A, bone; B, bladder; C, sigmoid colon.

the sigmoid and the bladder, and in this tract lay a large curved, sharp pointed chicken bone (fig. 2). There was no evidence of malignancy and there seems little doubt that a diverticulum had originally been the lodging point for this foreign body. From there it had slowly worked its way into the bladder.

About five weeks later, September 6, the patient was operated on for the third time, the object being to reestablish the continuity of the large intestine and perhaps get rid of the colostomy opening.

Consequently the abdomen was opened again through the original left paramedian incision, which was extended well above the umbilicus. The entire descending colon down to the colostomy and the left half of the transverse colon were mobilized (fig. 1C) by dividing the outer half of the mesentery so as to permit a lateral anastomosis between that part of the descending colon just proximal to the colostomy and the sigmoid colon, which originally lay just distal to the tumor mass. Recovery after this operation was, as after the two previous, uneventful.

On October 1, three and one-half months after the first operation, the final chapter in this interesting clinical drama was written; namely, the closure of the colostomy (fig. 1D).

This involved resection of the entire part of the intestine involved in the colostomy itself and the short stump distal to it and as far proximally as the site of the lateral anastomosis, in order to avoid leaving a fluid pocket at this point.

The end result, as judged by the appearance of the patient one year after his dismissal from the hospital, has been most pleasing both to the surgeons and to the patient himself.

#### COMMENT

In a careful study of the reviewed cases it was very difficult in many instances to determine the origin of the foreign body: (1) whether it traveled by way of the gastro-intestinal tract and for some reason hesitated in a portion of the bowel, (2) whether it became lodged in a diverticulum causing an inflammatory reaction with adhesion to the bladder wall and finally ulcerating through, or (3) whether the foreign body was introduced into the bladder through the urethra and ulcerated through the bladder wall, involving the wall of the intestine and in this way producing a fistula.

Considering the large number of foreign bodies found in the bladder, including stones which cause little or no change in the bladder wall, it is quite evident that the production of a fistula in this way is not very common.

The symptoms of foreign body vesico-intestinal fistulas do not differ very much from those of fistulas due to other causes. In addition to the striking symptoms of passage of gas and feces through the urethra and roaring in the bladder, the frequency, urgency, pain and strangury are more marked in cases presenting a foreign body. Again, these patients are likely to have more aggravated intestinal symptoms, which may precede those of the bladder.

When infection from the bladder spreads to the upper urinary tract, symptoms produced by renal infection appear, chills, fever, pain in the back, and, if the parenchyma becomes involved, the symptoms of renal damage may present themselves.

The presence of urine in the bowel movements is not as common in vesico-intestinal fistulas as some would believe, and it would seem that the intestinal contents, gas and feces, may pass into the bladder without a reverse flow of urine into the intestine. This is shown also by the fact that it is not often possible to visualize the intestine by injecting a contrast fluid into the bladder. The exception to this occurs in those cases in which a severe cystitis has developed with the production of a small thick-walled compensated bladder associated with increased intracystic pressure. This is true also in cases in which the condition is complicated by some form of obstruction of the lower urinary tract. Under these circumstances urine is likely to be found in the bowel movements.

We have been able to visualize the intestine a few times by passing a ureteral catheter into the bladder end of the fistula and injecting sodium iodide.

The preoperative diagnosis of vesico-intestinal fistula with present-day urologic methods is not difficult. The diagnosis of the cases produced by foreign bodies may not offer much difficulty if the foreign body can be found in x-ray films or seen with a cystoscope. In our case this was not possible. The chicken bone that produced the fistula was surrounded by a very large inflammatory mass involving the intestine and failed to show in the x-ray film. The part of the bone that lodged in the wall of the bladder did not protrude into the bladder and could not be seen with a cystoscope.

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COMPRESSION OF THE CAUDA  
EQUINA BY THE LIGA-  
MENTUM FLAVUM

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The diagnosis of compression of the lumbosacral roots of the spinal cord following injury is sometimes quite difficult. The usual classic sequence of root pain, loss of motion and sensation, vesical or rectal incontinence and absent reflexes does not prevail in each case. The symptoms of root pain which is accentuated by

lying on the back or on exertion should lead to a suspicion of compression of the cord. Hypertrophy of the ligamentum flavum in the lumbar region has been described on only three occasions.

The case reported by Elsberg,<sup>1</sup> cited the instance of a woman, aged 39, who was thrown from a car ten months prior to her operation. She suffered from stiffness of the back, with pain over the distribution of the fourth lumbar root



Fig. 1.—Defect between the fourth and fifth lumbar vertebrae on the left, indicative of a space-occupying lesion in this region.

on the left side. Roentgenograms revealed an old fracture and thickening of the arches of the fourth and fifth lumbar vertebrae. On performing a laminectomy, he found a thickened ligamentum flavum, lateral and posterior to the dura, which involved the fourth lumbar root. Apparently the ligament had been torn loose. Removal of this ligament was followed by complete recovery.

Towne and Reichert<sup>2</sup> reported two cases of compression of the lumbosacral roots of the spinal cord by thickened ligamenta flava.

One case reported was that of a laborer, aged 50, who may have received minor back injuries; the other was that of a housewife, aged 32, from whom no history of injury was obtainable. In both instances relief of pain was obtained by removal of the thickened ligamenta flava.

## ANATOMY

The ligamenta flava stretch across the posterolateral aspect of the spinal canal between the laminae. The ligaments, composed of yellow elastic tissue, are attached to the anterior aspect of the superior laminae and posterior surface of the inferior. The two ligaments of each interlaminar space fuse in the midline and extend laterally to form the posterior margin of the intervertebral foramina. The ligament, as normally observed during laminectomy, is 1 or 2 mm. thick and yellow.

## REPORT OF CASE

A young woman, aged 23, single, was referred to me, Oct. 29, 1935, because of pain in the left buttock radiating down the distribution of the left sciatic nerve.

In April 1935, in alighting from a car, she tripped and fell, landing on the left buttock and suffering a very severe contusion.

In July she began to complain of a dull backache in the region of the lumbar vertebrae. Roentgenograms of the spine at that time were negative and her family physician made a diagnosis of sacro-iliac strain. She achieved relief from pain by wearing a sacro-iliac belt. However, in August pain began to develop in the left posterior thigh and leg to the heel, occurring particularly at night, so that she was unable to lie on her back or her left side. The pain was also accentuated by coughing, sneezing, straining or stooping. In walking she noted a tendency to shift her weight to the right.

General physical examination was negative, including laboratory tests of the blood and urine.

Neurologic examination, October 29, was essentially negative. The possibility of a cord lesion developing was considered but, in the absence of symptoms, an epidural injection was performed, October 31. After 20 cc. of procaine hydrochloride had been injected into the caudal foramen, the pain was markedly increased. A total of 60 cc. of 1 per cent procaine hydrochloride was injected. She received no benefit and the injection was repeated in a week with no relief from pain. The pain became so severe that the administration of codeine was necessary to obtain relief.

December 16 she complained of a sense of numbness in the left leg. There was no change in sensation but the left patellar reflex was absent. The left achilles reflex was present.

Jan. 29, 1936, the neurologic status remained the same, except that the left achilles reflex was diminished. A spinal puncture and injection of lipoiodine was advised because of the history of

injury, the severe pain and absence of definite neurologic signs. It was felt that the patient had suffered a rupture of the intervertebral disk with a hernia of the nucleus pulposus into the canal.

February 3 she was admitted to Mercy Hospital, and needles were inserted between the twelfth dorsal and first lumbar vertebrae and between the fourth and fifth lumbar vertebrae. Two manometers were attached; the upper manometer registered 9 cm. of water and the lower manometer 6.5 cm. of water. On jugular compression, coughing and straining, fluid in the upper manometer rose to 15 cm. in the lower to 7.5 cm. Specimens of fluid were taken at each level; there was no excess of globulin in

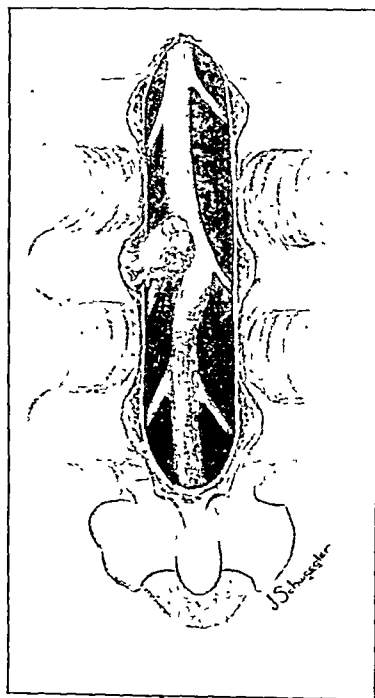


Fig. 2.—Drawing of hypertrophied ligamentum flavum as found at operation.

the upper one but there was an excess of globulin, 2 plus, in the lower one. The Wassermann test of the cerebrospinal fluid was negative. Then 5 cc. of lipoiodine was injected into the canal at the upper level. The patient was tilted on the fluoroscopic table and a narrowing of the lipoiodine was noted as it coursed between the fourth and fifth lumbar vertebrae, with a tendency for the fluid to go to the right. Roentgenograms revealed a defect between the fourth and fifth lumbar vertebrae suggestive of a hernia of the intervertebral disk on the left. A diagnosis of rupture of the intervertebral disk with compression of the cord was made, and laminectomy was advised.

From the Department of Neurosurgery, Mercy Hospital.  
1. Elsberg, C. A.: Experiences in Spinal Surgery, Surg., Gynec. & Obst. 16: 117-132 (Feb.) 1913.  
2. Towne, E. B., and Reichert, F. L.: Compression of the Lumbosacral Roots of the Spinal Cord by Thickened Ligamenta Flava, Ann. Surg. 94: 327-336 (Sept.) 1931.

February 26, under tribrom-ethanol anesthesia, a laminectomy was performed. The spinous processes and laminae of the third, fourth and fifth lumbar vertebrae were removed. There was a mass of hard fibrous material 2 by 2 by 1.5 cm. posterior and lateral to the cord at the level of the fourth lumbar interspace on the left. This compressed the cord and was adherent to the dura. It was noted that the dura below was a dark blue and that it did not pulsate. When this mass was divided it was found that a nerve root was embedded in the mass; it was freed



Fig. 3.—Tissue removed at operation, illustrating groove through which fourth lumbar root ran.

without gross damage to the root. The mass seemed to originate from the lamina of the fourth lumbar vertebra. After removal of this mass the cord pulsated freely and the color was normal.

The dura was opened and the lipiodine that had been injected previously was removed. No pathologic change in the cauda was noted. The dura was closed with continuous silk sutures; the muscles were closed with interrupted catgut sutures, and the skin with dermal reinforced with silkworm-gut sutures. There was no drainage.

The pathologist reported that the tissue removed consisted of yellow elastic and fibrous tissue. Recovery was uneventful and the patient was dismissed sixteen days after operation. There was no weakness of the extremities, sensation was intact, all reflexes were present, and pain was entirely relieved.

March 25 the patient stated that she was driving a car, walking one or two miles daily, had attended a dance without recurrence of pain, and to all appearances had recovered completely.

#### SUMMARY

This case is reported because of the persistence of root pain with a paucity of demonstrable objective changes. However, in the event of progression of symptoms, spinal manometric readings and injections



Fig. 4.—Thickened ligamentum flavum stained with eosin and hematoxylin; reduced from a photomicrograph with a magnification of 100 diameters.

of lipiodine are justified to determine the existence of an underlying pathologic process which may be removed before severe damage to the nerve roots has taken place. This case illustrates the rôle of antecedent trauma in which the ligamentum flavum was torn and, in the reparative process, scar tissue had caused a compression of the cord.

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## LATE TOXIC RESULTS, INCLUDING DERMATITIS EXFOLIATIVA, FROM "SLIM" (DINITROPHENOL)

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AND

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The pharmacologic actions of the nitrophenols<sup>1</sup> have been known since 1885, when it was found that these compounds possess the property of elevating the metabolic rate in animals. However, the effect of this chemical group on human beings was not generally recognized until the late war. At this time Perkins<sup>2</sup> investigations on munitions workers in France focused attention on its many toxic reactions.

The therapeutic possibilities of these chemicals apparently were not utilized until 1933, when Cutting, Mehrtens and Tainter<sup>3</sup> introduced dinitrophenol as a treatment for some forms of obesity. They were fully aware of the many potential dangers of this drug and in their original series of cases encountered only mild and transient reactions, perhaps because of the conservative dosage and stringent observation.

From the available reports of toxic manifestations to Jan. 1, 1936, it appears that the early reactions, except in the occasional hypersensitive individual, tend to be mild and transient. These familiar reactions include headache, mild chest pains and backache, excessive sweating and feeling of warmth, night sweats, lassitude, nervousness, tachycardia and palpitation, lowering of the blood pressure, vertigo, pharyngitis and otitis media, abdominal pain, derangement of taste, toxic hepatitis with jaundice, maculopapular erythema, urticaria, edema, purpura and extreme pruritus.<sup>4</sup>

Attempts to predetermine individual hypersensitivity to dinitrophenol have been unconvincing.<sup>5</sup> For this reason it is apparently impossible, at present, to foretell a very serious reaction to even a small amount of the drug. In all, seven fatalities from dinitrophenol and one from dinitrocresol have been reported. Two<sup>6</sup> of these were attributed to a definite overdosage, while

From the service of Dr. H. N. Cole and Dr. J. R. Driver, Division of Dermatology, Cleveland City Hospital, and the Department of Dermatology and Syphilology, Western Reserve University, School of Medicine.

1. Cazeneuve and Lépine: *Compt. rend. Acad. d. sc.* **101**: 1167, 1885.

2. Perkins, R. G.: *Pub. Health Rep.* **34**: 2335 (Oct. 24) 1919.

3. Cutting, W. C.; Mehrtens, H. G., and Tainter, M. L.: *Actions and Uses of Dinitrophenol*, J. A. M. A. **101**: 193 (July 15) 1933.

4. These references include: Anderson, Reed and Emerson.<sup>12</sup>

Tainter, Stockton and Cutting.<sup>13</sup>

Dintenfass.<sup>17</sup>

Hirsch, Sidney: Report of a Toxic Manifestation Due to "Dinitrenal," correspondence, J. A. M. A. **102**: 950 (March 24) 1934.

Frumess.<sup>5</sup>

Jackson, Harry, and Duvall, A. I.: Dinitrophenol Poisoning: Report of a Case, *ibid.* **102**: 1844 (June 2) 1934.

de Châtel and Motka.<sup>14</sup>

Bohn.<sup>10</sup>

Sidel, Nathan: Dinitrophenol Poisoning Causing Jaundice: Report of a Case, J. A. M. A. **103**: 254 (July 28) 1934.

Haft, H. H.: Toxicity of Dinitrophenol, correspondence, *ibid.* **101**: 1171 (Oct. 7) 1933.

Matzger.<sup>8</sup>

Brinhaber, L. G.: *West Virginia M. J.* **30**: 466 (Oct.) 1934.

Vangre, A. R.: *M. Times & Long M. J.* **62**: 347 (Nov.) 1934.

Nadler.<sup>12</sup>

Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: *Dinitrophenol in the Treatment of Obesity*, J. A. M. A. **105**: 332 (Aug. 3) 1935.

Noun, M. H.: Urticaria, Edema and Purpura Following Small Doses of Dinitrophenol, *Arch. Dermat. & Syph.* **32**: 288 (Aug.) 1935.

Epstein and Rosenblum.<sup>22</sup>

5. Frumess, G. M.: Allergic Reaction to Dinitrophenol, J. A. M. A. **102**: 1219 (April 14) 1934. Matzger, Edward: Can Sensitivity to Dinitrophenol Be Determined by Skin Tests? *ibid.* **103**: 253 (July 2) 1934. Eisner, E.: *Zentralbl. f. Gewerbehyg.* **9**: 81 (April) 1933.

6. Geiger, J. C.: A Death from Alpha-Dinitrophenol Poisoning, correspondence, J. A. M. A. **101**: 1333 (Oct. 21) 1933. Tainter, M. L. and Wood, D. A.: A Case of Fatal Dinitrophenol Poisoning, *ibid.* **102**: 1147 (April 7) 1934.

four of them<sup>7</sup> occurred in persons who had taken an amount within the "therapeutic range" and perhaps represent allergic responses. The remaining two fatalities<sup>8</sup> can be accounted for by complicating agranulocytosis.

It appears that a moderate amount of this drug must be taken before a neutropenia is produced. However, Hoffman, Butt and Hickey<sup>9</sup> reported a case developing after a total amount of 86 grains (5.6 Gm.) had been taken over a period of only fourteen days. In the remaining five cases<sup>10</sup> the average ingestion of dinitrophenol was 184 grains (12 Gm.) over a period of fifty-eight days.<sup>11</sup>

Thirty cases of polyneuritis can be found officially reported in the literature.<sup>12</sup> This includes a rather large number showing solely, or in combinations, aberrations of taste which have been interpreted as neuritis. Many cases have shown multiple regional involvement, but the feet and legs are the sites of predilection (stocking type seventeen, glove type ten and derangement of taste eight). Owing to the incompleteness of some reports it is impossible to determine the exact time that elapsed between the beginning of the treatment and the appearance of the neuritic symptoms. From those reports in which this factor was recorded it is found that the average time was at least ten weeks and the dosage apparently was well within the "therapeutic range." There was decidedly a wide variation in the duration of the symptoms, but subsidence within from weeks to months was the rule.

Of the many side actions of dinitrophenol, the rapidly developing cataracts have attracted the widest attention. The literature shows definite reports of fourteen bilateral cataracts,<sup>13</sup> and many of the writers mention additional ones of which they have knowledge. The shortest time reported for the appearance of this complication was three months and the longest eighteen months, with an average of nine months from the time the drug was first taken. The smallest total amount of dinitrophenol taken in these cases was 135 grains (9 Gm.) and the largest 1,900 (123.5 Gm.), with an average total dose of approximately 870 grains (56.5 Gm.). No case has shown spontaneous resolution and most have progressed to complete opacity within about three months.

Little emphasis has been given to the possibility that dinitrophenol may be cardiotoxic. Apparently there

are no lasting or significant alterations in pulse rate, blood pressure or cardiac auscultatory manifestations. Electrocardiographic studies on patients under the effects of this drug are few, there being a total of only five such cases in the literature. These were reported by de Châtel and Motika<sup>14</sup> and by MacBryde and Taussig.<sup>15</sup> The five patients thus studied received an acceptable dosage with close observation and yet showed definite alterations of the electrocardiogram in as early as two weeks. Although the period of follow-up was not prolonged, the original changes persisted for as long as ten weeks even after the discontinuance of the drug for a period of two weeks. It is noted by these authors that all the tracings, even those obtained from experimental animals, were quite similar and probably represented a myocardial dysfunction, as evidenced chiefly by alterations in the T wave.

These later and more severe sequelae are well illustrated by a patient who demonstrated a combination of several of them and whose history is here given:

#### REPORT OF CASE

*History.*—Mrs. G. L., a Jewess, aged 33, admitted to the Cleveland City Hospital Nov. 29, 1935, complained of an extremely pruritic generalized skin eruption, which had been present for eight months. The patient stated that before that time she "had never had any skin trouble." For the two weeks prior to the onset of the presenting complaint she had been taking 2 grains (0.13 Gm.) of dinitrophenol<sup>16</sup> daily, 28 grains (1.8 Gm.) in all. Even before she finished taking the dinitrophenol she began to notice a generalized pruritus, and two or three days later several small erythematous patches appeared on the face and back. New lesions continued to appear on various parts of the body and the older ones progressed to become confluent. The family and past histories were irrelevant.

*Physical Examination.*—On admission the patient was fairly toxic but ambulatory. The temperature was 37 C. (98.6 F.), pulse rate 95, respiratory rate 20, and the blood pressure 122 systolic and 80 diastolic. Practically the entire body surface, including the palms, soles and scalp, showed variously shaped, slightly scaly, beefy red, discrete and confluent patches measuring up to about 20 cm. in diameter. Many of the areas were desquamated and quite raw. Very little of the body surface was exempt. No mucous membrane lesions were found. The eyes and ears were normal, and the remainder of the physical examination was essentially negative.

*Hospital Course.*—The eruption continued to spread and within a few weeks became universal. One month after admission the patient developed a severe classic exfoliating dermatitis with redness and edema of the skin, oozing of serum, universal scaling and crusting, and loss of hair and nails with signs of toxicity and fever. Pruritus became very distressing. Moderate edema of the hands and feet was noted. Painful and disabling cutaneous contractures developed in the palms and popliteal and cubital spaces. Despite the use of many and varied soothing antipruritic and antiseptic remedies, practically no modification in the character of the violent skin reaction was effected until the past few weeks, when possibly there has been some slight improvement. The oozing and edema of the skin have subsided somewhat. For about three months following the development of the exfoliating dermatitis the patient had an unexplained spiking temperature between 35.5 and 39.5 C. (95.9 and 103.1 F.), which, since that period, has become normal. The pulse rate remained between 90 and 100 throughout, and the blood pressure did not vary.

On or about the fortieth hospital day she began to complain of difficulty in hearing and of pain and burning sensations in the hands and forearms. Because the remainder of the body was pruritic, the possibility of polyneuritis was considered. A neurologic consultant reported: "So much of the skin tissues

7. Correspondence: Lancet 1:489 (March 3) 1934. Masserman, J. H., and Goldsmith, Harry: Dinitrophenol, J. A. M. A. 102:523 (Feb. 17) 1934. Poole, F. E., and Haining, R. B.: Sudden Death from Dinitrophenol Poisoning, *ibid.* 102:1141 (April 7) 1934. Latimore, J. L.: J. Kansas M. Soc. 35:388 (Oct.) 1934.

8. Dameshek, William, and Gargill, S. L.: New England J. Med. 211:440 (Sept. 6) 1934. Silver, Solomon: A New Danger in Dinitrophenol Therapy, J. A. M. A. 103:1058 (Oct. 6) 1934.

9. Hoffman, A. M.; Butt, E. M., and Hickey, N. G.: Neutropenia Following Aminopyrine, J. A. M. A. 102:1213 (April 14) 1934.

10. Bohn, S. S.: Agranulocytic Angina Following Ingestion of Dinitrophenol, J. A. M. A. 103:249 (July 28) 1934. Dameshek and Gargill, S. Silver: Hoffman, Butt and Hickey.

11. Since January 1, two additional cases of agranulocytosis from dinitrophenol have been reported: Imberman, S. W., and Imberman, C. P.: Dinitrophenol Poisoning, J. A. M. A. 106:1085 (March 28) 1936.

12. Anderson, H. H.; Reed, A. C., and Emerson, G. A.: Toxicity of Alpha-Dinitrophenol, J. A. M. A. 101:1053 (Sept. 30) 1933. Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, *ibid.* 101:1472 (Nov. 4) 1933. de Châtel and Motika.<sup>14</sup> Nadler, J. E.: Peripheral Neuritis Caused by Prolonged Use of Dinitrophenol, J. A. M. A. 105:12 (July 6) 1935. Tainter, Stockton and Cutting.<sup>13</sup> Epstein, E., and Rosenblum, H.: J. Lab. & Clin. Med. 20:1118 (Aug.) 1935. Cogan, D. G., and Cogan, Frances C.: Dinitrophenol Cataract, J. A. M. A. 105:793 (Sept. 7) 1935.

13. Tainter, Stockton and Cutting.<sup>4</sup> Cogan and Cogan.<sup>12</sup> Horner, W. D.; Jones, R. B., and Boardman, W. W.: Cataracts Following the Use of Dinitrophenol, J. A. M. A. 105:108 (July 13) 1935. Shutes, M. H.: Am. J. Ophth. 18:752 (Aug.) 1935. Kniskern, P. W.: Cataracts Following Dinitrophenol, J. A. M. A. 105:794 (Sept. 7) 1935. Lazar, N. K.: Cataract Following the Use of Dinitrophenol, *ibid.* 105:794 (Sept. 7) 1935. Allen, T. D., and Benson, V. M.: Late Development of Cataract Following Use of Dinitrophenol About a Year Before, *ibid.* 105:795 (Sept. 7) 1935. Glowacki, B. F.: J. Michigan M. Soc. 34:535 (Sept.) 1935.

14. de Châtel, A., and Motika, J.: Deutsches Arch. f. klin. Med. 176:700, 1934.

15. MacBryde, C. M., and Taussig, B. L.: Functional Changes in Liver, Heart and Muscles, and Loss of Dextrose Tolerance, J. A. M. A. 105:13 (July 6) 1935.

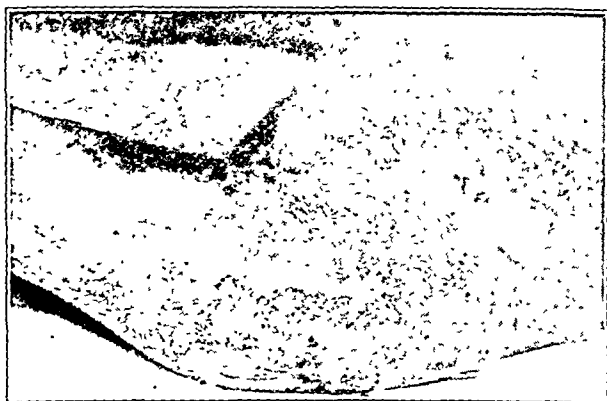
16. "Slim," a proprietary preparation containing "1 grain [0.065 Gm.] of dinitrophenol" per capsule.

are involved in this violent reaction that the nerve endings must be badly distorted in receptive function. One can only diagnose a polyneuritis by induction. The deafness may be otitic in origin; i. e., a reactive exudation in the middle ear rather than a nerve impairment." These localized paresthesias persisted practically unchanged for about two months, after which they began to subside.

Also on about the fortieth hospital day (nine and one-half months after the ingestion of the dinitrophenol), the patient first noticed a blurring of her vision. Several days later the ophthalmologists saw the patient and diagnosed "bilateral incipient cataracts." They observed the course of this complication and at the time of this report "there has been no evidence of progression in the lens opacities."

General therapy consisted of injections of hypertonic dextrose, sodium dehydrocholate and sodium thiosulfate intravenously. The last has also been given orally. Liver extract was given intramuscularly. The patient has been on a high caloric diet and 5 units of insulin daily for the past three months. The recent slight improvement that the patient has enjoyed cannot be attributed to any one of the foregoing procedures.

**Laboratory Examination.**—Consistent with a dermatitis exfoliativa, a Prausnitz-Küstner test with "Slim" was negative. The Marsh test on a capsule and its contents was negative for arsenic. The icteric index was 5 and 12 on two occasions; the blood cholesterol was 78 mg. per hundred cubic centimeters; two blood sugar determinations were 46 and 64 mg. per hundred



Intense exfoliation and crusting type of dermatitis at the end of ten and one-half months.

cubic centimeters. The blood urea nitrogen was only 7 mg. per hundred cubic centimeters. A urea clearance test was done with no evidence of renal damage; a phenolsulfonphthalein excretion test, however, showed slight retention, 55 per cent after two hours. Repeated urine examinations were negative for albumin and formed elements. Four blood studies were done with no evidence of agranulocytosis or other blood dyscrasia. There was, however, a slight secondary anemia. The basal metabolic rate was only plus 3. Two electrocardiograms at an interval of two weeks (about one year after the ingestion of the dinitrophenol) were somewhat conflicting and showed but little evidence of definite abnormality. In one, however, there was slight evidence of myocardial damage or dysfunction (low voltage QRS, leads 1 and 3; low voltage T, lead 3). The other showed left axis deviation with increased T wave in leads 1 and 2 but very low voltage T in lead 3.

#### COMMENT

Although combinations of toxic reactions to dinitrophenol have often been reported, the marked multiplicity, severity and tardiness of those shown by this case are remarkable. The most striking manifestation that this patient presented was her violent cutaneous reaction. Its appearance and course have been so similar to the exfoliative dermatitis seen following therapy with the arsphenamines that the close basic chemical relationship between that group and dinitrophenol immediately suggests itself. This relationship

has been mentioned several times in the reports of those cases of agranulocytosis developing from dinitrophenol. A careful search of the literature fails to reveal a previous case showing dermatosis of such chronicity or degree of exfoliation as that exhibited by this patient. In view of the frequent occurrence of the early cutaneous reactions to this drug it is surprising that some have not progressed to the type reported here.

When the pain and burning sensations of the hands and forearms first appeared, a definite interpretation could not be made. However, the subsequent course has been such that a final diagnosis of polyneuritis is justified. The manifestations of this late complication seen here vary in no respect from those previously reported.

The temporary deafness from which this woman suffered was due to an exudative otitis media and apparently is of the same nature as that reported by Dintenfuss.<sup>17</sup>

The cataracts observed here are at variance in two major respects with those previously described. In the first place they developed from an unusually small amount of the drug, and in the second place throughout the period of observation they have remained as minimal opacities. The resulting slight visual impairment would probably have escaped the patient's notice had it not been that she was under hospital observation. This suggests the possibility that other persons with a similar degree of impairment have not sought medical aid.

Electrocardiographic studies of the effects of dinitrophenol on the heart are so few that no definite conclusions can be drawn. That myocardial changes do occur and can be demonstrated electrocardiographically is shown by the few existing reports,<sup>18</sup> and that these changes may persist is at least suggested by the case at hand. It is, however, unfortunate that earlier tracings were not made. This interesting evidence of a possible severe and persistent complication from the use of dinitrophenol should be borne in mind and warrant further consideration.

#### SUMMARY

The case here presented shows a multiplicity of severe and persistent reactions, including exfoliating dermatitis thus far not reported, cataracts and polyneuritis following the ingestion of only 28 grains of dinitrophenol over a period of fourteen days.

17. Dintenfuss, Henry: An Ear Complication from Dinitrophenol Medication, J. A. M. A. 102: 838 (March 17) 1934.  
18. de Châtel and Motika,<sup>14</sup> MacBryde and Taussig.<sup>15</sup>

**Yellow Fever and Geography.**—Yellow fever had a marked effect on the "geographic expansion of the United States." In the latter days of the eighteenth century Napoleon sent a large body of troops under his brother-in-law, General LeClerc, to Santo Domingo and Haiti. It was Napoleon's plan after he had overrun those countries in the West Indies to send his troops on from there and occupy in force the Floridas and the territory of Louisiana on the American continent. However, as a result of yellow fever LeClerc's troops were practically decimated and became so debilitated and reduced in physical and numerical strength that his plans failed and he had to relinquish his intentions regarding the western hemisphere. Therefore in 1803 Napoleon was very glad to sell to the United States the territory of Louisiana known to us as the famous "Louisiana Purchase," whereby our country acquired a region which now comprises fourteen states of the Union. Had Napoleon's plans been successful in Santo Domingo, France probably would have been able to take, occupy and hold the Spanish owned Floridas and continue to possess the Louisiana territory with adequate forces.—Patterson, R. U.: Some Important Contributions to Medical Science by Military Surgeons, J. Oklahoma M. A. 29:157 (May) 1936.

THE CHOICE OF BISMUTH OR MERCURY  
WITH ARSPHENAMINE

IN THE TREATMENT OF EARLY SYPHILIS

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After a quarter century of experience with the arsphenamines, there are still schisms in the ranks of experts over many vital phases of their use in the treatment of syphilis. It is not surprising, then, that the status of bismuth—in use as an antisypilitic only a little over a decade—should not have achieved the fixity of the Decalogue. The physician who declines to depend on the drug salesman for his choice, and who attempts instead to sift the testimony of experienced users of bismuth, will find these divided, like Caesar's Gaul, in partes tres: one, led by the French, who see in bismuth a sort of miracle drug, destined to replace the arsphenamines because equally efficacious but less toxic; a second, who believe that bismuth cannot replace the arsphenamines but that as an adjuvant it has certain advantages over mercury, for which it may be substituted either entirely or in part, and a third who evidently feel about bismuth much as a famous Viennese doctor did about mercury when he pronounced it "a crime against the human race."

The stand of the "Bismuth über alles" exponents is already weakened by the generally admitted increase in the incidence of syphilis in France, where bismuth was almost universally substituted for the arsphenamines during the decade following its introduction in 1921. It was noticeable at the Réunion dermatologique in Strasbourg in June 1930 that even the French speakers differed among themselves in regard to the actual accomplishments of bismuth, several eminent syphilologists challenging the optimistic reports from the Fournier clinic and advocating that an arsphenamine be alternated with bismuth, at least in early syphilis. Those of the opposite extreme, who would ban bismuth at any price, seem to consist mostly of those who, like the French, embraced the new drug with initial enthusiasm as better than arsphenamine and, having found its action considerably short of miraculous, will henceforth have none of it.

Together with the majority of American syphilologists, we take the middle ground: we would by all means make arsphenamine bear the brunt of the attack in early syphilis and use mercury or bismuth as an adjunct. On the question of bismuth versus mercury, however, we have found the literature largely a literature of impressions, with surprisingly few systematic comparisons of the two. It was in an effort to determine at first hand the relative efficacy of the two drugs in the treatment of early syphilis that we decided to study the results achieved with various preparations of each, on groups of hitherto untreated syphilitic patients at the Vanderbilt Clinic. A few patients attending City Hospital also were included in the study.

## PROCEDURE

A certain number of patients admitted with primary or early secondary syphilis were placed immediately on bismuth or mercury preparations for a limited trial

period, so that we might observe their response to these drugs, uncomplicated by the arsphenamine factor. During this time the patient's general improvement, the healing of surface lesions and the disappearance of *Spirochaeta pallida* from the lesions were recorded. All these patients were placed on the standard arsphenamine-bismuth or arsphenamine-mercury treatment as soon as their surface lesions had healed. We also followed the results obtained with patients treated on the standard arsphenamine-bismuth or arsphenamine-mercury plan from the beginning. This combined treatment in both groups of patients was then further evaluated on the basis of (1) the reversal of the Wassermann reaction, (2) the number and type of relapses, (3) the patient's tolerance of the drug, and (4) his clinical and serologic behavior after completing the prescribed treatment.

The standard treatment plan to which we attempt to hold every clinic patient admitted with early syphilis calls for a total of three courses, of ten injections each, of an arsphenamine and three courses of fifteen injections each of a mercury or bismuth preparation throughout the first year. During the first month the arsphenamine and mercury or bismuth courses run concurrently; thereafter they alternate or overlap, so that the patient is continuously under treatment with one or the other, or both. The first six injections of arsphenamine may be given twice weekly and the following four at weekly intervals, or they may be given as often as every other day for six injections and the following four at three, four, five and six day intervals to complete the first course. The second and subsequent courses of arsphenamine are given twice weekly for the first six injections and weekly for the following four. The interval between the first and second courses of arsphenamine should be four weeks, between subsequent courses six weeks.

The first course of fifteen injections of mercury or bismuth is given at four or five day intervals for the first six injections and weekly for the following injections of the course. Both intravenous and intramuscular injections may be given at the same visit, for the convenience of the patient, except that during the first two weeks the patient receives from four to six injections of arsphenamine and only three of mercury or bismuth. Between arsphenamine courses, and while the patient is receiving only mercury or bismuth, he is also given potassium iodide by mouth.

If at the end of the first year the blood Wassermann and spinal fluid reactions are negative and there has been neither serologic nor clinical relapse, the patient is permitted to stop treatment and remain under observation, returning at intervals of three months for blood tests during the second year, and at longer intervals thereafter.

This regimen could not always be followed. The Vanderbilt Clinic is not a free clinic and this department has no Saturday or evening hours, so that many employed patients in the lower income brackets find it difficult or impossible to attend more than once a week over any considerable length of time. A number of cases included in the original investigation were excluded from the final analysis because of irregular attendance or other accidental factors which might have interfered with a fair appraisal of the drugs used. Those included may be understood to be patients with syphilis whose infection was of not more than six months' duration at the time they began treatment and who attended with fair regularity. The study comprises 379 cases in all.

## CHOICE OF BISMUTH PREPARATIONS

The mechanism of action of bismuth compounds in the organism is not yet understood, but it seems to depend chiefly on the amount of bismuth metal that can be introduced without toxic effects. At least no differences in the therapeutic efficacy of bismuth compounds have been noted that cannot be accounted for by the ease with which the bismuth metal is split off and taken up by the organism. Of salts in aqueous solution, only one-fourth or one-fifth as much can be injected at a time, as of compounds suspended in oil. And of the amount injected, it appears to be that fraction in active circulation which is therapeutically effective. But this circulating bismuth is for the most part on its way out of the system by way of urine and feces, a small part probably being held back in various organs and released later. Since the compounds in aqueous solution—because of both the smaller individual dose and the aqueous medium—are absorbed and eliminated very rapidly, injections must be given at intervals of one or two days in order to maintain an adequate concentration of the metal in the blood stream. This drawback is increased by the fact that injections of the salts in aqueous solution are usually painful. On the other hand, bismuth compounds suspended in oil, besides being well tolerated in larger amounts, are absorbed much more slowly and eliminated only gradually, so that even with one injection weekly a fair amount of the bismuth metal remains in circulation. Bismuth in oily solution, introduced more recently, is considered to combine many of the advantages of both the foregoing groups with a minimum of their disadvantages. Its action begins more promptly than that of the oily suspensions. It is absorbed more slowly than the soluble salts and therefore remains in circulation longer than these, but its release is not so slow as to risk accumulating toxic residues at the site of injection. Like the oily suspensions, bismuth in oily solution is relatively painless on injection and is even less apt to form sterile abscesses later on. It was with these considerations in mind that the following preparations of bismuth were selected for use in the overwhelming majority of cases in the Vanderbilt Clinic:

*Sodium Potassium Bismuth Tartrate.*—This is the suspension in olive and almond oils, with butyn, each cubic centimeter containing 50 mg. of metallic bismuth. Of the various bismuth preparations investigated by Cole and his co-workers,<sup>1</sup> the oily suspension of the water-soluble tartrate gave evidence of being absorbed more rapidly than the oily suspension of the insoluble bismuth salicylate but more slowly than the various watery or oily solutions tested, so that one injection a week is sufficient to maintain an active fraction in circulation. The injections are relatively painless, and Raiziss<sup>2</sup> found this to be one of the least toxic of various bismuth preparations tested. The individual dose is usually 1 cc. (50 mg. of metallic bismuth) at the beginning and is increased to 2 cc. after the first few injections, making a total of about 1,350 mg. of bismuth metal in a course of fifteen injections.<sup>3</sup>

1. Sollmann, Torald; Cole, H. N., and Henderson, Katharine I.: Excretion of Bismuth in a Series of Clinical Bismuth Treatments, *Arch. Dermat. & Syph.* 28: 615 (Nov.) 1933.

2. Raiziss, G. W.; Severac, Marie, and Moetsch, J. C.: Toxicity of Various Compounds of Bismuth Used in the Therapy of Syphilis, *J. Chemothérapie* 10: 77 (Jan.) 1934.

3. Manufactured by the Dermatological Research and is not to be confused with the so-called tartrate known as "Trepol," used so extensively in France and found by the Council on Pharmacy and Chemistry of the American Medical Association to be virtually a basic bismuth tartrate containing small amounts of potassium, sodium and calcium salts as impurities, and some uncombined potassium sodium tartrate. See Warren, L. E.: What is the Composition of Bismuth Tartrates Used in the Treatment of Syphilis? *J. A. M. A.* 84: 1067 (April 4) 1925.

*Bismo-Cymol* (N. N. R.).—This is the basic bismuth camphocarboxylate in solution in olive oil, each cubic centimeter containing 50 mg. of metallic bismuth. Its toxicity, investigated by Kolmer,<sup>4</sup> both in animal experiments and in clinical trials, was found to be very low, the maximum tolerated dose being fifteen times the amount of the therapeutically active dose. Raiziss<sup>2</sup> also found this preparation to be less toxic than other oil-soluble preparations of bismuth. The initial dose of 1 cc., representing 50 mg. of metallic bismuth, is increased after a few injections to 2 cc., giving the patient a total of about 1,350 mg. of bismuth metal per course, as in the case of the tartrate.

A few patients in City Hospital who were treated with biliposol (N. N. R.) and a few Vanderbilt Clinic patients who received potassium bismuth tartrate (N. N. R.) were also considered eligible for inclusion in the present study. The same dosage scheme was followed for these preparations as for those already discussed (from 1 to 2 cc. weekly). Biliposol, an oil-soluble preparation containing 40 mg. of elemental bismuth in 1 cc., would provide about 1,080 mg. of bismuth per course of fifteen injections. The excessive cost of this otherwise satisfactory preparation has interfered with its wider trial in the two clinics. The potassium bismuth tartrate in suspension in almond oil contains 33.5 mg. of elemental bismuth in 1 cc. and would supply a total of from 900 to 1,000 mg. of bismuth per course. This preparation was replaced by the sodium potassium bismuth tartrate largely on account of the higher bismuth content of the latter product. Any patients who had difficulty in tolerating injections of the oil-suspended salts could usually tolerate the oil-soluble bismo-cymol.

## CHOICE OF MERCURY PREPARATIONS

The same general considerations that have been set forth briefly with regard to bismuth apply also to the choice of mercury preparations, except that the metal content of the various mercurials is subordinate to factors making for tolerance, because of the narrower margin of safety between the therapeutic and toxic doses.

Mercuric salicylate, given in the great majority of cases in the present study, has been used so widely and over so long a period that it would be superfluous to review its claims here were it not for the recent tendency of some syphilologists to demote it in favor of the water-soluble succinimide. Mercuric salicylate, or, more accurately, the basic mercuric anhydride of salicylic acid, contains about 55 per cent of metallic mercury and is relatively painless when injected intramuscularly in a suspension of a vegetable oil. Absorption begins promptly, as shown by comparatively high excretion curves within twenty-four hours after injection,<sup>5</sup> but excretion continues more slowly for a considerable period after the end of a course, thus providing an advantage over the soluble mercurials similar to that of the insoluble salts of bismuth. Weekly injections, beginning with one-half grain (0.03 Gm.) and increasing to 1 grain (0.065 Gm.), keeps a fair amount of the metal in circulation, as evidenced by excretion, and if courses are alternated either with an arsphenamine or a bismuth preparation, toxic symptoms are relatively infrequent.

4. Kolmer, J. A.: Basic Bismuth Campho-Carboxylate (Bismo-Cymol) in the Treatment of Syphilis, *Am. J. Syph.* 15: 190 (April) 1931.

5. Lomholt, S., also Bürgi, E.: *Handb. d. Haut- u. Geschlechtskr.* 18: 1, 1928.



Mercuric succinimide (N. N. R.), the mercuric salt of succinic acidimide, containing approximately 50 per cent of mercury, has proved a worthy addition to the list of soluble mercurials. Like other soluble preparations, it is painful on injection and is absorbed so rapidly that daily injections are needed in order to maintain an adequate concentration in the blood stream. These drawbacks render it impracticable for routine clinic use, but it is valuable in cases in which prompt action is important and the arsphenamines are contraindicated. For patients included in this study, the standard dose was one-fourth grain (0.016 Gm.) given daily or on alternate days.

#### BISMUTH AND MERCURY AS SPIROCHETICIDES

It is doubtful whether either mercury or bismuth exerts direct spirocheticidal action in the system. In vitro, bismuth does not kill *Spirochaeta pallida* even when mixed with serum, but with extracts of certain organs, especially liver, it forms a compound known theoretically as "bismoxyl," which is spirocheticidal. Kolle's experiments indicate that bismuth inhibits the growth of the parasite without destroying it. As for mercury, Lomholt has shown that *Spirochaeta pallida* could grow in a concentration of mercury in the blood serum more than twice as great as that prevailing in the blood of a patient at the saturation point, or limit of tolerance at which toxic symptoms appear. These and other facts suggest that whatever spirocheticidal action is exerted by mercury, and to a certain extent that exerted by bismuth, is indirect, by stimulating the tissues to a stronger defense reaction. Since for a direct attack on *Spirochaeta pallida* we depend primarily on the arsphenamines, the performance of the heavy metals in this respect is of secondary importance. Nevertheless, because the disappearance of spirochetes from open lesions furnishes one of the few visible criteria of a drug's action, we made systematic darkfield examinations from fifty-two cases of primary syphilis. Half the patients in this group received mercury and the other half bismuth preparations. None received any arsphenamine during this test period.

In eleven of the fifty-two cases, *Spirochaeta pallida* could not be found in the chancre fluid, usually because the patient had already used a local disinfectant. In two instances positive gland punctures were obtained where the chancre fluid had been negative. The procedure regularly followed was to make three preparations at each visit, and a "negative" was reported only after all three preparations had proved negative on at least two successive visits. Up to fifty fields were examined on each preparation, depending on the scarcity of organisms.

Among the bismuth-treated cases with positive darkfield before beginning treatment, *Spirochaeta pallida* disappeared

After 1 injection in 1 to 7 days in 12 cases.  
After 2 injections in 3 to 13 days in 7 cases.  
After 3 injections in 11 to 18 days in 2 cases.

In one additional case treated with bismo-cymol, spirochetes were still present after three injections, thirteen days after treatment was begun.

Among the mercury-treated cases, *Spirochaeta pallida* disappeared

After 1 injection in 2 to 5 days in 4 cases.  
After 2 injections in 4 to 11 days in 12 cases.  
After 3 injections in 9 days in 1 case.  
After 4 injections in 8 days in 1 case.  
After 5 injections in 6 days in 1 case.  
After 7 injections in 31 days in 1 case.

Superficially, the results indicate a superiority of bismuth over mercury as a spirocheticide, since 86 per cent of the bismuth-treated patients as against 80 per cent of the mercury-treated patients had negative darkfields after one or two injections of the drug; or, stated in terms of days, one might expect to find a negative darkfield by the fifth day from the average bismuth-treated patient, but not until the eighth day from the average patient under mercury. Allowance should be made, however, for the fact that the four patients who received the succinimide would perforce show a larger number of injections, as this drug was given at shorter intervals than the salicylate. Spirochetes were found in the chancres of some patients from both the bismuth and mercury groups up to the healing of the lesions, and in both groups there were instances in which spirochetes were found in abundance after the lesion had completely epithelized, when the surface was scraped and fresh serum obtained from beneath.

In the preparations from treated patients were observed many atypical forms of *Spirochaeta pallida*—branched, budding and fissured forms interpreted by some investigators, notably Noguchi, as regression forms, by others as organisms in process of active multiplication. In every such case the original preparations made before the patient had received any treatment had shown typical *Spirochaeta pallida* from the same lesion. One case presented two penile chancres, one with a moist necrotic surface abounding in typical *Spirochaeta pallida*, the second with a healed surface and button-like induration showing the atypical forms after the lesion had been scraped and fluid collected on the slide.

#### THE COMPARATIVE VALUE OF BISMUTH AND MERCURY AS JUDGED BY THE HEALING OF PRIMARY LESIONS

Of patients admitted with primary syphilis, sixty-eight were found whose records showed regular treatment (not less than once a week) either with bismuth or mercury preparations alone or with the combined bismuth-arsphenamine or mercury-arsphenamine treatment. The effect of this treatment on the healing of primary lesions has been summarized in table 1. From this it will be seen that among the patients who received only mercury or bismuth preparations from the beginning there was less than a day's difference in the average time required for the primary lesion to heal: 15.8 days for the eighteen patients treated with bismuth preparations alone, and 16.6 days for the twenty who received only mercurials. Thirty-one days was the longest time required for either group. There was no appreciable difference in the time of healing for patients who received the sodium potassium bismuth tartrate and those who received biliposol. Bismo-cymol was not represented in this group. In the majority of cases, the chancre healed after the third injection, the average for the bismuth group being 3.5 injections, representing an average of 0.234 Gm. of bismuth metal. In the mercury group the average time of healing was exactly the same for patients who received the insoluble mercuric salicylate and those who were given the soluble succinimide, but the latter were obliged to have nearly three times as many injections as the former to secure similar results—an average of nine injections of the succinimide as against 3.6 injections of the salicylate.

Among the patients who received bismuth-arsphenamine treatment from the beginning, the chancres

healed in an average of eighteen days, while the average for the corresponding mercury-arsphenamine group was 20.8 days. Or, to judge from the time average of 16.9 days for all thirty-six bismuth-treated primaries, as compared with 18.2 days for the thirty-two mercury-treated ones, a primary lesion might be expected to heal from one to three days sooner under bismuth than under mercury, whether or not the patient received any arsphenamine in the meantime. Curiously enough, the time of healing averages several days less for patients treated with mercury or bismuth alone than for those who received some concomitant arsphenamine treatment. This advantage however is more apparent than

itself. It should be understood, of course, that with clinic patients the time recorded for the healing of lesions is often several days longer than the actual time, since the patient as a rule would not be seen by his physician after the "healing" injection until he returned for the next injection scheduled.

THE HEALING OF SECONDARY LESIONS

The healing of secondary lesions was studied from the records of 180 patients admitted with florid secondary manifestations and treated regularly either with mercury or bismuth preparations alone or with an arsphenamine in addition to mercury or bismuth.

TABLE 1.—The Comparative Value of Bismuth and Mercury in the Healing of Primary Lesions

	Bismuth Alone 18 Cases	Mercury Alone 20 Cases	Bismuth-Arsphenamine* 18 Cases	Mercury-Arsphenamine* 12 Cases	All Bi-muth 36 Cases	All Mercury 32 Cases
Average time and injections required	15.8 days 3.5 injections	16.6 days 3.6 injs. Hg Sal. or 9 injs. Hg Suc.	18 days 3.4 injs. Bi 4.9 injs. Arsph.	20.8 days 3.3 injs. Hg Sal. 6.3 injs. Arsph.	16.9 days	18.2 days

\* The majority of the bismuth-arsphenamine patients and all the mercury-arsphenamine patients received silver arsphenamine for their arsphenamine.

real, because it happens that the overwhelming majority of patients in this particular primary group who were placed on the standard arsphenamine-bismuth or arsphenamine-mercury plan from the beginning were given silver arsphenamine, and some of them had received as many as five or six injections of this preparation before the intramuscular injections were begun. Since this time, silver arsphenamine has demonstrated itself to be much slower in action than arsphenamine. One of our previous studies<sup>6</sup> showed that ordinary primary lesions of patients treated with arsphenamine and either bismuth or mercury as an adjunct will heal in an average of nine or ten days; more recent cases, in which slightly smaller doses were given, averaged 12.5 days (table 2). Either of these represents a much

If the relative efficacy of bismuth and mercury alone on all types of secondary lesions (table 3) is considered first, results indicate a slight advantage for mercury, since the average time of healing for the forty-five patients treated with mercury preparations was 20.8 days, as compared with 22.2 days for the fifty patients treated with bismuth preparations. The time average was identical for the patients who received mercuric salicylate and those who received the succinimide, but the latter were obliged to have between two and three times as many injections in order to achieve the same results. The majority of the patients in the bismuth group received sodium potassium bismuth tartrate and the group averaged 0.292 Gm. of bismuth metal before secondary lesions were entirely healed.

With regard to the number of injections, mercury shows itself prompter but more uneven in its action than bismuth. Considering only the cases treated with the salicylate, and remembering that two or three times as many injections of the succinimide would be required, one finds that very nearly half the thirty-seven mercury-treated patients had their lesions healed by the time they had received three injections, whereas less than one third of the fifty bismuth-treated patients were free from manifestations after three injections. After five injections, 81 per cent of the mercury-treated patients were lesion free, as compared with only 66 per cent of the bismuth-treated ones. However, after a sixth injection all but four of the bismuth group had cleared, the slowest requiring eight injections, while seven of the mercury group still remained, the slowest of these requiring eleven injections to clear entirely. In addition, there were two cases which responded so poorly to mercury that the patients were placed on arsphenamine treatment before the lesions had healed.

When an arsphenamine was given along with a mercury preparation from the beginning (thirty-four cases), the time for the healing of secondary manifestations averaged slightly less than it did under the bismuth-arsphenamine plan (fifty-one cases) but the difference was negligible: twenty days for the mercury-arsphenamine group and 20.7 days for the bismuth-arsphenamine group. Mercuric salicylate and bismo-cymol were the only preparations given intramuscularly in these groups, while arsphenamine, silver

TABLE 2.—The Comparative Value of the Arsphenamines\* in the Healing of Primary Lesions

	Arsphenamine 20 Cases	Silver Arsphenamine 25 Cases	Neorsphenamine 13 Cases
Average time and injections required	12.5 days 3.1 Arsph. injections	18.4 days 5.4 Arsph. injections	21.3 days 4.8 Arsph. injections

\* Practically all patients received some bismuth or mercury besides the arsphenamine.

shorter time than that required for bismuth or mercury alone or for a combination of either with silver arsphenamine.

Although the "bismuth alone" group received preponderantly sodium potassium bismuth tartrate, and the "bismuth-arsphenamine" group preponderantly bismo-cymol, both bismuth groups received almost identical average amounts of bismuth metal (0.234 and 0.25 Gm. respectively), the slight advantage being with the bismuth-arsphenamine group. The "mercury alone" and "mercury-arsphenamine" groups, both of whom received a majority of their intramuscular injections in the form of mercuric salicylate, show a greater difference in the time of healing (16.6 days vs. 20.8 days) than do the two bismuth groups (15.8 days vs. 18 days), so that the apparent disadvantage of using an arsphenamine seems to lie in the choice of the arsphenamine

C. Cannon, A. B., and Karelitz, M. B.: The Comparative Value of the Arsphenamines in the Treatment of Early Syphilis, J. A. M. A. 97: 1523 (Nov. 21) 1931.

arsphenamine and neoarsphenamine were all represented, silver arsphenamine preponderating in both groups.

If all the bismuth-treated secondaries are combined in one group and all the mercury-treated secondaries in another, both those patients who received some arsphenamine and those who did not, there remains an advantage of one day, on the average, in favor of mercury (20.4 days as against 21.4 days for bismuth). A glance at the figures comparing the different arsphenamine preparations among themselves will show that either arsphenamine or silver arsphenamine, in combination with intramuscular injections, acts more promptly than mercury or bismuth alone, but that even mercury or bismuth alone is more effective than a combination with neoarsphenamine, which gives the slowest response of all (an average of 23.7 days for forty-eight cases).

Looking back over the aggregate results obtained with preparations of bismuth and mercury, either alone or in combination with an arsphenamine, in the healing of primary and secondary lesions, it might be inferred that in the primary stage, before the body has developed its own defense mechanism, bismuth is more effective than mercury—possibly by virtue of its spirocheticidal properties; whereas by the time the body has elaborated

five injections of mercuric salicylate, twenty-three days after beginning treatment) and no essential difference was noted in the serologic behavior of the two groups thereafter, this factor will be ignored in presenting the results in the primary cases.

TABLE 5.—*The Comparative Value of Bismuth, Mercury and the Arsphenamines in Reducing a Positive Wassermann Reaction in Primary Syphilis*

	Bismuth* 15 Cases	Mercury† 21 Cases	Arsphen- amine‡ 19 Cases	Silver Arsphen- amine‡ 20 Cases	Neo- arsphen- amine‡ 19 Cases
Average time and injections to 1st negative Wassermann reaction	65.4 days 10.4 Bi injs. 8.7 Arsph. injs.	61.8 days 8.9 Hg injs. 8.6 Arsph. injs.	33.2 days 7 Arsph. injs.	66.1 days 9 Arsph. injs.	71 days 10 Arsph. injs.
Remained posi- tive 6 mos. or over	None	1 case	1 case	2 cases	5 cases

\* All received some arsphenamine in addition.  
† All but one received some arsphenamine in addition.  
‡ All received bismuth and/or mercury in addition.

*In Primary Syphilis.*—Of patients admitted in the seropositive primary stage, thirty-six were found who had attended regularly at least until the Wassermann

TABLE 3.—*The Comparative Value of Bismuth and Mercury in the Healing of Secondary Lesions*

	Bismuth Alone 50 Cases	Mercury Alone 45 Cases	Bismuth- Arsphenamine 51 Cases	Mercury- Arsphenamine 34 Cases	All Bismuth 101 Cases	All Mercury 79 Cases
Average time and in- jections required	22.2 days 4.5 injections	20.8 days 4.2 injs. Hg Sal. or 9.3 injs. Hg Suc.	20.7 days 3.7 injs. Bi 4.5 injs. Arsph.	20 days 3.2 injs. Hg Sal. 4.7 injs. Arsph.	21.4 days	20.4 days

its own defenses, as evidenced by the appearance of secondary manifestations, the stimulating action of mercury is more potent, though less uniform, than bismuth. When an arsphenamine is used in conjunction

TABLE 4.—*The Comparative Value of the Arsphenamines in the Healing of Secondary Lesions*

	Arsphenamine 35 Cases	Silver Arsphenamine 71 Cases	Neoarsphenamine 48 Cases
Average time and injections re- quired	19.5 days 4 Arsph. injections	19.2 days 4.4 Arsph. injections	23.7 days 6.2 Arsph. injections

with a heavy metal, as would usually be done in practice, arsphenamine will give the best results, and the advantage of either heavy metal over the other shrinks to minor proportions.

THE COMPARATIVE VALUE OF BISMUTH AND  
MERCURY IN REDUCING A POSITIVE  
WASSERMANN REACTION

The comparative value of bismuth and mercury in reducing a positive Wassermann reaction was perforce evaluated on the basis of the combined bismuth-arsphenamine and mercury-arsphenamine treatment, except that the limited number of patients aforementioned received a partial course of the intramuscular injections before beginning their first arsphenamine course, whereas the majority were started at once on the combined treatment. Since only one seropositive primary patient had a reversal of the Wassermann reaction under the intramuscular treatment alone (after

reaction became negative, receiving an arsphenamine and various amounts of mercury or bismuth. The fifteen who received bismuth preparations (sodium potassium bismuth tartrate and bismo-cymol) required an average of 65.4 days to become Wassermann negative, while twenty mercury-treated patients (all of whom received mercuric salicylate) became Wassermann negative in an average of 61.8 days, one patient treated with mercuric salicylate and silver arsphenamine remaining positive throughout nine months of fairly regular treatment and then showing fluctuating serologic reactions for an additional two years. Of twenty-six patients admitted in the seronegative primary stage, eleven, or about 40 per cent, became seropositive within a few weeks after beginning treatment and then reverted to negative as treatment was continued. This occurred in about equal proportions in both mercury and bismuth groups, and among those who received an arsphenamine from the beginning as well as those who were started on bismuth or mercury alone.

Besides these transitory positives occurring in patients who began their treatment in the seronegative stage, there were two early serologic relapses among regularly treated primaries in the mercury group and one in the bismuth group. Not one of the three was strongly positive, and all later reverted to negative. A number of patients showed a positive Wassermann reaction after absentsing themselves from the clinic for various lengths of time, but it would be obviously unfair to consider these cases as indicative of the efficacy or inefficacy of the drugs used.

If the serologic response of the patients who began their treatment before secondary manifestations had

appeared are balanced, it might be concluded that those who receive mercury in addition to an arsphenamine have a slight advantage over those who receive bismuth, in that a positive Wassermann reaction became negative in the mercury group about four days earlier, on the average, than in the bismuth group. But one patient treated with mercury would probably be classed as Wassermann fast, and the proportion of serologic relapses was slightly higher in the mercury group, although the number of cases is too small for this to be of much significance.

*In Secondary Syphilis.*—All patients discussed here were admitted with florid secondary manifestations and a strongly positive Wassermann reaction. Altogether 158 were considered eligible for comparative study,

the mercury-treated cases and only one of the bismuth-treated cases remained positive for over six months. These persistent positives were not included in computing the averages.

Considering next the 108 patients who had the typical combined treatment from the beginning, one half receiving bismuth and arsphenamine, the other half mercury and arsphenamine, we find that all but two in the bismuth-arsphenamine group became Wassermann negative in an average of 79.9 days from the time of beginning treatment, while the patients in the corresponding mercury-arsphenamine group required 82.6 days. The two remaining bismuth-arsphenamine cases and five mercury-arsphenamine cases remained positive for over six months of regular treatment.

TABLE 6.—Serologic Response to Mercury and Bismuth Compared, in Secondary Cases Under Regular Treatment

	Bismuth Alone* 26 Cases	Mercury Alone* 23 Cases	Bismuth-Arsphenamine 54 Cases	Mercury-Arsphenamine 54 Cases	All Bismuth 80 Cases	All Mercury 77 Cases
Average time and injections to 1st negative Wassermann reaction	83.4 days 11.7 injs. Bi 8 injs. Arspb.	92.3 days 12.9 injs. Hg 8.9 injs. Arspb.	79.9 days 10.2 injs. Bi 9.4 injs. Arspb.	82.6 days 10.3 injs. Hg 10.5 injs. Arspb.	81.1 days	85.4 days
Still positive after 6 months or more of regular treatment	1 case	3 cases	2 cases	5 cases	3 cases	8 cases
Serologic relapse in 1st year, during regular treatment	3 cases†	1 case‡	6 cases†	5 cases‡	9 cases	6 cases
All cases with unsatisfactory serologic response to early regular treatment	4 cases	4 cases	8 cases	10 cases	12 cases	14 cases

\* Intramuscular injections alone until surface lesions healed, then arsphenamine in addition.  
† All were ± and reverted to negative under continued treatment.  
‡ Four were ± and reverted to negative under continued treatment.

having been treated regularly at least until their Wassermann reaction became negative, or, in the Wassermann-resistant cases, for not less than six months. The majority were under treatment and observation for one year or longer. The serologic results were evaluated on the basis of the combined bismuth-arsphenamine and mercury-arsphenamine treatment, except that slightly less than one third of the patients received a partial course of bismuth or mercury before beginning their first arsphenamine course, while the majority received the combined treatment from the beginning. In the belief that it might be of interest to

Taking all bismuth-treated secondaries under consideration here (eighty cases) and all mercury-treated secondaries (seventy-seven cases), the mercury group still requires an average of 85.4 days to achieve a negative Wassermann reaction, while the bismuth group requires only 81.1 days. In addition, there are more than twice as many persistently positive Wassermann reactions among the mercury-treated cases as among the bismuth-treated ones. As might be expected, those patients who received an arsphenamine from the start, in addition to a heavy metal, fared better than did the ones who received only bismuth or mercury until their surface lesions had healed. Arsphenamine, silver arsphenamine and neoarsphenamine are represented in both groups, but it so happens that the mercury-arsphenamine group contained a larger proportion of patients treated with neoarsphenamine than did the bismuth-arsphenamine group. As may be seen from table 7, neoarsphenamine makes the poorest showing of all the arsphenamines in reducing a positive Wassermann reaction in secondary syphilis, so that one may reasonably surmise that mercury if given in conjunction with a more active arsphenamine—preferably arsphenamine—would show itself to be more nearly equal in potency to bismuth.

TABLE 7.—The Comparative Value of the Arsphenamines in Reducing a Positive Wassermann Reaction in Secondary Syphilis

	Arsphenamine 101 Cases	Silver Arsphenamine 64 Cases	Neo- arsphenamine 122 Cases
Average time and injections to 1st negative Wassermann reaction	82.5 days 10 Arspb. injections	87.6 days 10 Arspb. injections	103.5 days 14 Arspb. injections
Remained positive 6 mos. or over	7 cases (6.9%)	10 cases (15.6%)	17 cases (14%)

All received bismuth and/or mercury in addition to the arsphenamine.

see whether this difference affected the outcome, we recorded the results separately for the different groups. If first the patients who began their treatment on the heavy metals alone are examined, twenty-six receiving bismuth preparations and twenty-three mercurials, the results as summarized in table 6 disclose a decided advantage for bismuth over mercury, in that the time necessary to secure a negative Wassermann reaction averaged 83.4 days for the bismuth group, as against 92.3 days for the mercury group. Moreover, three of

SEROLOGICALLY RESISTANT AND RELAPSING CASES,  
BOTH PRIMARY AND SECONDARY, UNDER  
REGULAR TREATMENT

Besides those secondary cases in which the Wassermann reaction remained persistently positive throughout six months or more of regular treatment (eight cases under mercury and three under bismuth), there were some which reverted to a weak positive after having become negative and while the patients were still under regular treatment. The distribution of these cases may

be seen in table 6. Of the secondary patients who began their treatment on mercury or bismuth alone, three reverted temporarily to a positive serologic reaction while under active treatment with bismuth preparations, but only one relapsed while under active treatment with mercury. Among the much larger number of patients who were given the combined treatment from the beginning, the groups being evenly divided between bismuth and mercury, there were six relapsing Wassermann reactions among the bismuth-arsphenamine cases and five among the mercury-arsphenamine ones. For the sake of completeness it will be well to add to the picture those patients who failed to respond adequately to treatment begun in the seropositive primary stage: one Wassermann-resistant case and two serologic relapses under regular treatment with mercuric salicylate and silver arsphenamine, and one serologic relapse under bismo-cymol and silver arsphenamine. This makes a total of thirteen bismuth-treated patients, or 13.7 per cent, and seventeen mercury-treated patients, or 17.2 per cent, who failed to show an entirely satisfactory serologic response to early regular treatment. This disregards patients admitted in the seronegative primary stage, among whom occurred a number of transitory positives within a few days or a few weeks after treatment was begun; these are always open to suspicion as having been on the verge of becoming seropositive when treatment was initiated, in which case the first injection or injections evidently act as a provocative. Late-recurrences, appearing after the completion of a year or more of treatment, will be considered under "End Results."

The early relapsing Wassermann reactions enumerated here in all but a single instance were of the  $\pm$  grade (cholesterinized antigen 2+, alcoholic antigen negative, Kahn negative), and reverted to negative as the treatment was continued. How much significance attaches to these temporarily recurrent positives, it is difficult to say: they may represent only the vagaries of a highly sensitive cholesterinized antigen, but until more is known regarding this factor, it was deemed best to report the reactions as they were. For some, at least, of the persistently positive Wassermann reactions it is probable that insufficient dosage is responsible. At any rate these patients were found to have averaged about 20 mg. less of bismuth metal per week and from 15 to 20 mg. less of mercury salts per week than did those patients whose Wassermann reaction became negative within the usual time.

#### END RESULTS

So far we have considered chiefly the response of the various treatment groups to early treatment. It is now necessary to see what proportion of these patients remained symptom free after having completed the minimum amount of treatment considered adequate to prevent a relapse; namely, one year of regular treatment with an arsphenamine and a heavy metal in alternating and/or overlapping courses. One should remember that in separating out the eligibles from the ineligible it was necessary to eliminate not only patients who had attended irregularly or for an inadequate length of time but also those who had been adequately treated for the required year or more, if for any reason more than one heavy metal had been administered during this time. Thus, in a considerable number of cases, mercury and bismuth courses were alternated, either because a patient manifested some symptoms of

intolerance to one drug or because the attending physician wished to avoid such a contingency. There is also the theoretical possibility of the parasite becoming mercury fast or bismuth fast, when one or the other drug is continued over long periods.

Among the sixty-seven cases finally included as eligible for comparing end results, the distribution of favorable and unfavorable outcomes may be seen in table 8. The only patient of this number who manifested a clinical relapse returned to the clinic with generalized serpiginous lesions and a strongly positive Wassermann reaction ten months after having completed a first year of regular treatment, during which time he had received twenty-six intravenous injections of silver arsphenamine and thirty intramuscular injections of bismo-cymol, a total considerably below the optimum recommended.

A study of serologic relapse occurring after one year of regular treatment reveals five recurrences in the bismuth group and four in the mercury group, three of each reverting later to negative, with or without further treatment. As was pointed out in connection with serologic relapses occurring during early treatment, the significance of this phenomenon is the more difficult to

TABLE 8.—Results of Bismuth and Mercury Compared, in Patients Treated Regularly for One Year or More

	Total Number of Patients Treated Regularly for 1 Year or Longer*	Unsatisfactory Behavior After One Year or More of Regular Treatment			Summary	
		Clinical Relapse	Serologic Relapse	Wassermann Fast	Satisfactory	Unsatisfactory
Bismuth	26	1	5†	0	20 77%	6 23%
Mercury	41	0	4†	2	35 85.4%	6 14.6%

\* Includes only patients treated with a single heavy metal throughout.  
† Three later reverted to negative.

evaluate, in view of the fact that more than half these recurrent positives were of the doubtful variety and reverted to negative without further treatment. Two additional cases, however, both treated with mercuric salicylate and silver arsphenamine, remained Wassermann fast, one of them fluctuating between  $\pm$  and negative for nearly three years.

Tests of the spinal fluid revealed a number of positives among patients with early syphilis as yet untreated or only partially treated, all becoming negative under further treatment; but only one patient showed a positive spinal fluid after completing one year of regular treatment. This patient, a woman of 58 admitted with florid secondaries, through an excess of caution was given only one-half the regulation dosage of silver arsphenamine and mercuric salicylate. Her blood Wassermann reaction also reverted to positive and the case is among those already recorded under serologic relapse. At the time of writing, eleven months later, the patient is under treatment and still free from any clinical symptoms of neurosyphilis.

If all these recurrent manifestations are counted at their face value in order to balance the respective achievements of the mercury-arsphenamine and bismuth-arsphenamine treatment, we are left with six cases in each group which showed unsatisfactory behavior after one year of regular treatment. Since the mercury-arsphenamine group is the larger, the

proportion of unsatisfactory outcomes is smaller in this group, and its percentage of satisfactory outcomes is 85.4 as against 77 for the bismuth-arsphenamine group.

#### COMPLICATIONS DUE TO MERCURY OR BISMUTH

A bird's-eye view of the complications due to bismuth or mercury alone and those in which the heavy metals may have been a contributory factor is represented in table 9. The records of all patients in the present study were taken into account for this purpose. Immediate reactions traceable unequivocally to an arsphenamine were of course excluded. Complaints of "sore hip" without objective signs, while given due consideration, were not tabulated under local reactions.

There was no serious reaction attributed to bismuth alone in the entire series, and only one patient had a local reaction at the site of injection. This was a case of purpura which developed around the site of injection of bismo-cymol and attained a diameter of about 8 cm. It was in all probability due to the accidental rupture of a blood vessel, complicated by toxic properties of the drug. The most common by-effects attendant on the administration of bismuth preparations were stomatitis, gingivitis and the "bismuth line" along the gums. These occurred at different stages of treatment in different patients and irrespective of the preparation used. One

In fixing the blame for delayed reactions such as dermatitis, jaundice and neuritis, one can only infer from their relative frequency in the two treatment groups which of the heavy metals makes the less favorable combination with an arsphenamine, since all patients sooner or later had the combined treatment. There are almost twice as many cases of dermatitis and jaundice among patients treated with bismuth and an arsphenamine as among those who received mercury and an arsphenamine, although no dermatitis case in either group was of the severe exfoliative variety. In the literature, both dermatitis and jaundice have been reported in considerable numbers in patients treated with bismuth alone, whereas dermatitis following the internal use of mercury has been a rarity in modern times. Jaundice is not even mentioned in connection with mercury in the leading textbooks, and it is well known that the kidney, rather than the liver, is the organ most susceptible to mercury. The picture is often obscured by the physician's tendency to attribute to the arsphenamine all skin manifestations occurring under combined treatment. Thus in several such instances, when a dermatitis appeared, the physician discontinued the arsphenamine and gave the patient a series of sodium thiosulfate injections, while continuing the bismuth therapy. The rash persisted unchanged

TABLE 9.—Complications

	Attributed to Bismuth or Mercury Alone				Bismuth or Mercury Possibly Contributory				
	Stomatitis and/or Gingivitis	Bismuth Line	Local (Hip) Reactions	General Reactions	Total	Dermatitis	Pruritus	Jaundice	Neuritis
Bismuth 180 cases	4 cases	3 cases	1 case	1 case	9 cases 5%	8 cases	1 case	14 cases	1 case
Mercury 199 cases	9 cases	.....	4 cases	5 cases	18 cases 9%	5 cases	1 case	9 cases	.....
									Total
									24 cases 13%
									15 cases 7.5%

patient also complained on three occasions of general lassitude and somnolence lasting for several days, with some elevation of temperature, after injections of bismo-cymol.

Three patients had fairly severe general reactions within a few hours after an injection of mercuric salicylate. One of these reported a temperature of 100.4 F., general malaise, chills, profuse sweating and diarrhea lasting two days, after a first injection of mercuric salicylate (three-fourths grain, or 0.05 Gm.). The next dose, cut to one-half grain (0.03 Gm.), was tolerated without mishap, as were subsequent doses of three-fourths and 1 grain (0.05 and 0.065 Gm.). A second patient, a strong healthy man, aged 38, reported a syncope followed by profuse perspiration a few hours after his third injection (one-half grain, or 0.03 Gm.) of mercuric salicylate. The third patient had chills, fever, congestion of the lungs, and a local swelling of the hip within a few hours after his twentieth injection (1 grain, or 0.065 Gm.) of mercuric salicylate. Not one of the three was receiving arsphenamine at the time. The symptoms in the third case suggest the entry of the needle into a vein, in which case the fault lies in the technic rather than in the drug. Two more patients reported fever and general malaise after several early injections of mercuric salicylate. Besides these general reactions there were more cases of stomatitis and also more local disturbances at the site of injection under mercury than under bismuth preparations, and they occurred as a rule much earlier in the course than did similar reactions to bismuth.

over uncommonly long periods, and one case of jaundice attributed to the arsphenamine persisted for four and one-half months while the patient continued his bismuth injections. The one case of neuritis in the entire series grew markedly worse when two injections of bismuth were given after the patient had complained of pains in the arms and legs and stiffness in the joints. Two cases of generalized pruritus without objective symptoms, one under mercury and one under bismuth medication, were the only other ill effects noted. No patient showed any evidence of nephritis or any significant changes in the blood counts, although a routine urinalysis was done at monthly intervals, and a blood count was made early and late in the courses of treatment. There were no hemorrhages of skin or mucous membranes other than the one case of traumatic purpura already mentioned.

#### SUMMARY AND CONCLUSIONS

On the basis of our observations as a whole, neither bismuth nor mercury appears to have such a decided advantage over the other as much strongly partisan testimony would lead one to believe. While in our comparative studies of the arsphenamines, arsphenamine proved to be almost uniformly superior to neo-arsphenamine, and silver arsphenamine, by every criterion applied, no such clear-cut superiority could be discerned in the performance of either of the heavy metals. Spirochetes disappeared from primary lesions and the lesions themselves healed more promptly under bismuth than under mercury, but a positive Wasser-



mann reaction reversed earlier under mercury in the primary stage; in fact, one primary patient achieved a negative Wassermann reaction in twenty-three days under mercuric salicylate alone (five injections) while his chancre was still unhealed and spirochetes were still present in the chancre fluid. In secondary syphilis, however, the situation was reversed: mercury gave slightly better results than bismuth in the healing of eruptions, condylomas and mucous patches, but mercury-treated cases were considerably slower in becoming Wassermann negative (they were at a disadvantage, however, in that the patients received preponderantly neoarsphenamine for their arsphenamine). Again, there were more than twice as many patients serologically resistant to mercury as to bismuth, but more relapses occurred under bismuth.

Among patients with early syphilis who completed the required first year of regular treatment, there was a larger proportion of satisfactory outcomes in the mercury group than in the bismuth group. The only clinical relapse occurred in a patient treated with bismo-cymol and silver arsphenamine, but the total number of injections received was below the optimum recommended. The only patient who showed a positive spinal fluid after completing a year of regular treatment received mercuric salicylate, silver arsphenamine and arsphenamine in but half the recommended dosage.

In the matter of complications that could be definitely attributed to the heavy metals alone, bismuth was responsible for only half as many as mercury; while of delayed systemic reactions such as dermatitis, jaundice and neuritis, in which both the arsphenamine and the heavy metal may be presumed to have had a part, the mercury group contributed only a little more than half as many cases as the bismuth group.

Thus the differences are not easily weighed and measured, and such differences as appear when the intramuscular injections are given alone, or preceding the first arsphenamine course, tend to become obliterated when an active arsphenamine preparation accompanies the heavy metal from the start. The facts uncovered in the present study suggest that:

1. The salts of both metals have an important place in the antisyphilitic armamentarium. The various preparations selected—both of bismuth and of mercury—appear to have justified themselves in all cases examined in which the treatment was regular and the dosage adequate; but neither metal can compensate for the disadvantage of using an inferior arsphenamine preparation.

2. Mercury gives more brilliant but less uniform results than bismuth, so that in robust patients with a healthy excretory mechanism the body's natural defenses are perhaps more effectively stimulated by the mercurials. For patients less vigorous and for those who do not respond well to mercury preparations, bismuth offers a valuable substitute.

3. Arsphenamine can be counted on to deliver the strongest initial attack against *Spirochaeta pallida* and acts to best advantage when reinforced by one of the heavy metals; but if for any reason an arsphenamine is contraindicated, bismuth will probably give the better performance alone.

4. For those who would minimize the chances of ill effects and for those who hold that the parasite may become drug fast, alternating the two metals offers an obvious advantage.

## VIABILITY OF BACTERIUM TULARENSE IN HUMAN TISSUES

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W. H. H., a white man, aged 49, a master mechanic, dressed a rabbit that had been killed by his son, Jan. 12, 1935. Previously his health had been excellent and his weight had averaged 175 pounds (79.4 Kg.). January 15 he had a severe chill for two hours, followed by high fever and marked loss of strength. The next day he could scarcely speak above a whisper. January 18 a sore appeared on the right third digit near the nail root. The entire arm became painful, and tender swellings developed at the elbow and in the axilla. The temperature was 104 F. and remained so for the next three days. After January 21 he was out of bed, sitting around his home, with moderate fever, little malaise, profound weakness, drenching sweats, and pain limited to the right hand and arm.

January 24 he walked to the office and gave the foregoing history. On examination he was well developed, slightly pallid and obviously ill. His weight was 161 pounds (73 Kg.) and his height 65½ inches (166 cm.). The right pupil was slightly larger than the left. There was a small anterior perforation of the nasal septum. The neck, thorax, heart and lungs were normal. The blood pressure was 100 systolic, 80 diastolic. There were no abnormalities of the abdomen, genitalia or rectum. All reflexes were normal, and the extremities were normal, except the right upper. The dorsal surface of the terminal phalanx of the right middle finger showed an ulcerated, pustular lesion with surrounding purplish engorgement and redness extending up the dorsum of the hand to the wrist. The entire hand was swollen. A very large tender epitrochlear node was felt above the elbow. The overlying skin was desquamating. There was moderate enlargement of the axillary nodes but no other adenopathy. The temperature was 100 F.

The Wassermann and the Kahn reaction of the blood were negative. Smears were negative for malaria. Red blood cells numbered 4.48 millions, with hemoglobin 88 per cent. The white blood cell count was 10,400: polymorphonuclears, 72 per cent; lymphocytes, 25 per cent; transitionals, 3 per cent. There was moderate achromia. The urine was clear, acid, with a trace of albumin, no sugar, a few finely granular and hyaline casts, and bile two plus.

Intradermal injection of deaminized *Bacterium tularense* suspension gave a moderate positive reaction the next day and a markedly positive one forty-eight hours later. Blood serum agglutination, performed at the National Institute of Health Laboratory, gave partial agglutinations in dilutions 1:10 and 1:20.

January 31, 30 cc. of antitularense horse serum was given by vein. The primary lesion, finger and hand were improved by February 6, but the general condition remained unchanged. Mild serum sickness, with arthralgias of the right ankle and left shoulder occurred, February 9, and lasted for three days. In view of the continued weakness, drenching sweats and loss of weight (to 149 pounds [67.6 Kg.] February 11) it seemed that he should have been given more serum. As it was considered unwise to repeat horse serum in the presence of serum sickness, 20 cc. of antitularense goat serum was given by vein, February 11. An intradermal test made with this serum again gave the characteristic bacterial specific response. Following the second injection of serum the fever subsided promptly and the residual symptoms disappeared. The primary lesions were healed by February 20, and the nodes were less than half their former size. The patient resumed his usual work, March 15, having been disabled for two months. February 16, a serum agglutination test at Washington gave complete agglutination through 1:2,560 dilution. March 23 the epitrochlear node was still enlarged, tender and somewhat painful. The weight was 153 pounds (69.4 Kg.). He had been generally afebrile except for an occasional rise to 99.4 F.

April 18 the right elbow became swollen again, red and tender. This lasted for one week, then subsided spontaneously. May 11 the swelling occurred again. The temperature was

98 F., and the weight was 157 pounds (71.2 Kg.). By May 18 the swelling was sharply localized in the region of the olecranon bursa, accompanied by increased local heat, redness and definite fluctuation. About 6 cc. of bloody, turbid, ropy fluid was aspirated from the bursa and a compression bandage applied. Smears of the fluid showed many red blood cells and lymphocytes, no polymorphonuclears and no bacteria. The fluid agglutinated *B. tularense* completely through 1:1,024 dilution. A guinea-pig was injected subcutaneously with 2 cc. of fluid, May 21. Each of two blood-cystine-dextrose agar slants was inoculated with several loopfuls of fluid. After three days one slant showed 7 colonies that were typical for *B. tularense*. Stained smears showed minute gram-negative coccoid and bacillary forms. Dermal inoculation of a guinea-pig with one colony caused death on the fourth day. The autopsy gave results typical for rodent tularemia, and cultures from the heart blood yielded a pure growth of *B. tularense*. The guinea-pig that had been injected with the bursa fluid died after three and one-half days. The autopsy was typical and the heart blood cultures yielded a heavy growth of *B. tularense*.

Apart from the mild annoyance of a tender elbow the patient felt well. He remained afebrile and continued to work. He reported again, June 15, and stated that he was as well as he had been prior to the onset of the infection in January. The bursa was still swollen and fluctuant, and overlying tissues were mildly inflamed. Aspiration yielded about 5 cc. of ropy, turbid amber fluid. He was bled again for agglutinins. Serum agglutination was complete for *B. tularense* through dilution 1:640 and almost complete in 1:1,280. There was no agglutination against *Brucella* or *Proteus* OX<sub>10</sub>. The bursa fluid agglutinated *B. tularense* completely to 1:512 and partially to 1:1,024. Smears of the fluid (Gram stain and Nile blue sulfate stain, as before) showed: lymphocytes, 95 per cent; mononuclear cells, 2 per cent, and polymorphonuclears, 3 per cent. There were few erythrocytes. Along the thicker ropy parts of both smears were scattered bacteria, singly or in groups of from three to five, all minute rods, morphologically and tinctorially indistinguishable from *B. tularense*. There was no cellular karyorrhexis and no bacteria were seen intracellularly. Two slants of blood-cystine agar were inoculated with the fluid. After forty-eight hours' incubation one slant showed 4 colonies and the other 3 colonies, all typical of *B. tularense*. Dermal inoculation of a guinea-pig caused typical tularemic death on the fourth day, and pure cultures of *B. tularense* were recovered from the heart blood at autopsy. Another guinea-pig had been injected subcutaneously with 1 cc. of the bursa fluid. This animal died three and one-half days after injection. Autopsy showed typical rodent tularemia, and pure cultures of *B. tularense* were recovered from the heart blood.

The patient was seen again, July 15. He had continued to be well. The epitrochlear node never suppurated and was now quite small. The olecranon bursa was still enlarged but no fluctuation was demonstrable. Attempted aspiration gave only a few drops of bloody fluid, possibly not from the bursal cavity. Cultures of this fluid remained sterile and guinea-pig inoculation caused the animal no harm.

While at rest, September 17, the patient was seized suddenly with severe pain in the epigastrium, referred to the precordium and down the left arm. Pain was cramplike, accompanied by nausea and vomiting. It soon disappeared, to recur suddenly and more severely two nights later, at which time it lasted for one and one-half hours. There had been no previous attacks. The temperature varied from 99 to 101 F. for forty-eight hours, and the pulse rate was from 40 to 50 per minute. The white blood cells numbered 6,200, with polymorphonuclears 71 per cent, lymphocytes 29 per cent. The Wassermann reaction was negative. An electrocardiographic tracing showed complete heart block and evidences of coronary disease. The blood pressure was 120 systolic, 80 diastolic. A second electrocardiogram five days later showed normal conduction and a ventricular rate of 90 per minute. For this last information we are indebted to Dr. J. H. Gibbs, who saw the patient during the heart attack and who will report more extensively on the cardiac involvement elsewhere.

#### COMMENT

We know of four patients who have died abruptly following sudden severe substernal or precordial pain during convalescence from tularemia. Only one had

had symptoms of angina prior to tularemic infection. One case, that of a man, aged 36, who died suddenly, came to necropsy and will be reported in detail by K. V. Kitzmiller. The additional burden of tularemic infection, with possible coronary arteriolar endothelial proliferation, is more than hearts previously impaired by atheroma, sclerosis or syphilitic vascular disease can stand. Persons in the atheroma or sclerotic ages should be watched with special care during convalescence from tularemia. Elevated ventricular rates, palpitation and substernal discomfort indicate a need for careful cardiac examination. By doing so the physician and the patient may be forewarned, and appropriate rest or therapeutic measures may be taken to prevent possible impending death. In our patient the anginal symptoms and heart block occurred just eight months after the onset of tularemia.

The unusual feature, to us, was the prolonged presence in pure culture of highly virulent *B. tularense* within the bursal cavity, associated with signs of regional low grade subacute or chronic inflammation, but without accompanying fever or other symptoms or signs of illness or intoxication. We know of no previous instances of tularemic bursitis and cannot say whether such lesions usually suppurate. In this instance impending suppuration was not apparent. The cellular response was predominately lymphocytic, and phagocytic cells appeared late and were extremely few in number. It is possible that specific serum therapy may have aided in maintaining the quiescent status of the bursitis and in preventing the occurrence of systemic symptoms. The increasing natural immunity acquired by recovery may have served similarly.

It is not rare for tularemic infection to lie apparently dormant in certain patients for long periods after what appears to be complete clinical recovery. Residual infection is usually betrayed by sudden reenlargement of some previously involved lymph node. Very rarely late enlargement and suppuration have occurred in nodes not known to have been involved previously. Recurrent adenopathies have appeared as late as one year or more after cessation of all disability but are most frequent during the first four months. In more than half of these cases the nodes suppurate, sometimes with a very slight degree of regional inflammation and often with little or no constitutional reaction. Many of them behave like cold abscesses, and after incision or spontaneous rupture healing is often amazingly rapid and residual abscess is rare. Judged by cultures and animal inoculations the pus is usually sterile. Nodes that suppurate early in the illness are prone to contain viable bacteria.

Viable virulent bacteria have been recovered from other patients late in the disease. Five months after the onset of infection Ryan<sup>1</sup> recovered a pure culture through guinea-pig inoculation with pus from a draining axillary abscess incision. The patient had been afebrile for about three months before the recurrent bubo became apparent. The guinea-pig died on the tenth day after subcutaneous injection. A second animal passage (infected splenic pulp to shaved abdominal wall) caused death in six and one-half days. These survival periods suggest some attenuation of virulence of the strain. Kilbury and Fulmer<sup>2</sup> record recovery of a virulent strain by animal inoculation with ascitic fluid obtained three months after the onset of ulceroglandular tularemia. The acute phase and initial disability

1. Ryan, V. M.: *Bacillus Tularense* in Lymph Glands Five Months After Infection, Illinois Dept. Pub. H., circular 44, 1933.  
2. Kilbury, M. J., and Fulmer, S. C.: Tularemic Peritonitis; Report of Case Observed for Four Years, *South. M. J.* 24: 856 (Oct.) 1931.

had lasted for about three weeks. It was only after resumption of work that the patient noticed progressive gradual enlargement of the abdomen. The constitutional symptoms were astonishingly mild despite the tularemic general peritonitis. Disability recurred, however, and it was two and one-half years before normal work could be resumed. Blackford<sup>3</sup> recovered a virulent strain from a proliferative dermal lesion of the arm. Dermal biopsy was made three months after the onset of the disease. Pure cultures of *B. tularense* were secured by animal inoculation with a macerated piece of the tissue. The remainder of the tissue, sectioned and stained, showed organisms that were morphologically and tinctorially consistent with *B. tularense*.

Clinical evidence from other patients also points to prolonged survival of *B. tularense* in human tissues. Goodpasture<sup>4</sup> saw a recrudescence of severe symptoms several months after the onset of disease in one patient, and a recrudescence with fever for one week occurred in another patient one year after apparent recovery from the acute phase. Francis<sup>5</sup> records the occurrence of febrile relapses, one of six and one of eight days, in two cases of laboratory infection at ten months and at eight months after the onset of disease. Rickman<sup>6</sup> observed a patient who had had many recurrent bouts of fever, with nodal enlargements of the forearm, arm and axilla, over a period of two years. The most recent recurrence, beginning at about the twenty-first month of illness, was ushered in by constitutional symptoms almost as severe as the initial acute phase, with recurrent tender nodes of large size (3 by 5 cm., 2 by 3 cm. and the like). No nodes ever suppurred. Antitularense serum (30 cc. intravenously) effected a sharp reduction in the size of all nodes and caused a marked amelioration of symptoms, but it is not known whether this improvement was permanent. We have also studied a patient with chronic tularemia, a woman whose initial infection occurred in December 1927 and whose diagnosis was confirmed by repeated agglutination tests at the National Institute of Health Laboratory. The acute phase, with temperature to 104 F., lasted for six weeks. An axillary node suppurred in February 1928. Later that year four abscesses occurred, one on a leg and three on fingers. For five and one-half years after the onset she was forced to go to bed for approximately two months out of each year because of fever, malaise, sweats, recurrent adenopathies, profound weakness and mental depression. Antitularense serum (20 cc. by vein) was given sixty-five months after the onset, causing a prompt reduction of fever and transient amelioration of symptoms. No permanent improvement was secured. She is still ill with intermittent symptoms and recurrent adenopathies eight years after the onset of disease.

One of the prominent features of tularemia is the prolonged persistence of agglutinins in the serums of recovered patients. Also, the degree of immunity conferred by recovery is not surpassed by that of any other infection known to us. With the exception of one extremely mild second infection in a heavily exposed laboratory worker, reported by Francis,<sup>7</sup> and recognized as such only because of his exceptional zeal,

no second attacks of the disease are known. This seems especially significant, even at present when the total experience with the disease is not great, for the occupational exposure hazard among butchers, market men and game skimmers is fairly high. It is inconceivable to us that all the immune persons in this occupational group should have escaped contact with infectious materials or that every disease producing reinfection should have eluded detection during the past decade when accurate recognition of the disease has become widespread, when diagnostic aids of great reliability have been widely available and when disability due to the disease has been compensable in certain states under workmen's compensation acts.

We interpret the permanent persistence of serum agglutinins, the freedom from second attacks and the persistent positive responses to intradermal injections of *B. tularense* suspensions and to injections of antitularense serum to mean permanent residual living bacteria held in certain tissues in innocuous equilibrium as far as their capacity to produce disease is concerned. Goodpasture<sup>4</sup> has previously expressed this belief in regard to tularemia, and Mooser<sup>8</sup> has adduced strong evidence indicating comparable situations in other infectious diseases. Late relapses and recrudescences indicate a recurring dominance of bacterial activity over the inhibiting factors. Similar conditions seem to obtain only in those infections which usually confer permanent protection after recovery from one attack. The recurrent typhoid abscess of the sternum recently reported by Gannon<sup>9</sup> is interesting in this regard. The recurrent local lesion first attracted attention five years and eight months after apparent complete recovery. Aspiration of the abscess five weeks later gave pus which yielded pure cultures of typhoid bacilli.

Careful studies of animals inoculated with tissues removed at necropsy from recovered tularemia patients who have died from other causes would be extremely useful, and they might confirm the hypothesis of residual living antigen. We have hoped for such an opportunity but, so far, without success. We hope that others to whom it may come will be interested in pursuing it.

#### SUMMARY

A patient with the ulceroglandular form of tularemia, treated by antiserum, developed tularemic infection of the olecranon bursa three months after onset of the disease and one month after cessation of disability. No constitutional symptoms accompanied the bursitis. Regional symptoms and signs, and the cellular reaction within the bursal fluid, indicated a mild subacute or chronic infectious process. Viable virulent *B. tularense* was obtained from the fluid by direct cultures and by animal inoculations four months and five months after the onset of illness, corresponding to the second and third months after cessation of all disability. *B. tularense* was seen in stained smears of one specimen of the fluid. *B. tularense* can survive in certain tissues of recovered patients for long periods. The ultimate outcome of these bacterial seclusions seems to depend on the solidity of the established bacteriostatic equilibrium.

Tularemic infection is a distinct danger to hearts with preexisting vascular disease.

126 Wellington Place—1512 Marion Street.

3. Blackford, S. D., and Smith, D. C. Prolonged Existence of *B. Tularense* in Skin Ulcers of a Syphilitic Patient, South. M. J., to be published.

4. Massee, J. C.: Tularemia Studies in Georgia. J. M. A. Georgia 21:7 (Jan.) 1932; discussion by W. C. Goodpasture.

5. Francis, Edward: Tularemia, Atlantic M. J. 30:337 (March) 1927.

6. Rickman, S. M., Louisville, Ky., personal communication to the authors.

7. Francis, Edward: Tularemia Francis 1921: A New Disease of Man, J. A. M. A. 78:1015 (April 8) 1922.

8. Mooser, H.: Experimental Studies with a Spiral Organism Found in a Wild Rat and Identical with the Organism Causing Rat-Bite Fever, J. Exper. Med. 42:539 (Oct.) 1925; Ueber den Einfluss der Wutinfektion auf die Gehirnsprochachten Rekurrenz-immuner Ratten, Arch. f. Schiffu. u. Tropen-Hyg. 33:83 (Feb.) 1929; Ueber das Gewebvirus beim Mexikanischen Fleckfieber, Schweiz. med. Wchnschr. 59:599 (June 8) 1929.

9. Gannon, J. A.: Typhoid Abscess About Lower End of Sternum, J. A. M. A. 105:113 (July 13) 1935.

## Clinical Notes, Suggestions and New Instruments

### ALLERGIC SYNOVITIS DUE TO INGESTION OF ENGLISH WALNUTS

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Bilateral chronic synovitis or intermittent hydrarthrosis appears in attacks of such striking periodicity that an allergic basis for these attacks is strongly suggested.

In 1924 Miller and Lewin<sup>1</sup> were the first to suggest that idiopathic hydrarthrosis is a sensitization disease, basing their evidence on the satisfactory response of this condition to injections of peptone intravenously.

Judging from the sparse literature since this observation, very little attention has been given to this group of cases, with the exception of Rowe,<sup>2</sup> who reported a case of intermittent hydrarthrosis that proved to be due to food sensitization. Skin tests were mostly negative in this case and the causative foods were determined by means of his elimination diets.

We report a case of intermittent hydrarthrosis of the knee due to ingestion of English walnuts. By allergic synovitis we mean a swelling, hyperemia and overactivity of the synovial membrane manifested by swelling, limitation of motion, increase of free fluid and a feeling of constriction in the joint.

#### REPORT OF CASE

H. W., a high school boy, aged 16, consulted one of us (P. L.) Jan. 25, 1930, because of stiffness and swelling, which had occurred intermittently for ten years. There had been periods during which the attacks occurred every two or three months. Swelling came on suddenly and disappeared, usually within twenty-four hours. Several joints were loose but none other than the knees became swollen.

The patient did not sneeze and had never had asthma, urticaria or eczema. His father had hay fever and his paternal uncle had hay fever and asthma. His mother had had urticaria from eating tomatoes or strawberries. He was referred to one of us (S. J. T.) for investigation of allergic factors.

It was found that the ingestion of the meats of half a pound of English walnuts was followed within seventy-two hours by a typical attack. Sensitization tests were made, both cutaneous and intradermal, with a positive reaction to English walnuts only. He was advised to avoid all nuts in the diet and to return in four weeks. Within two weeks the swelling and stiffness in the knees had cleared up completely. When the patient reported after an interval of four weeks, both knees appeared normal.

One-tenth cubic centimeter of the patient's blood serum was injected intradermally on the outer aspect of the left arm and 0.1 cc. of 5 per cent dextrose solution was injected in the right arm as a control. The patient was told to eat a liberal amount of English walnuts and to look at both arms at hourly intervals for any sign of swelling, redness or itching over the areas where the injections were made. Within two hours a large wheal with redness and severe itching appeared over the left arm where the patient's blood serum had been injected, while the control arm remained normal.

Three days later he noticed swelling and stiffness in both knees similar to the previous attacks. This condition persisted for five or six days and then gradually subsided. The patient was seen again July 22 and reported that he had abstained from eating nuts and had had no recurrence of synovitis.

#### COMMENT

The possibility of food allergy should be considered in every case of idiopathic synovitis. A personal or family history of the common allergic diseases, namely asthma, hay fever, urticaria, angioneurotic edema, eczema or migraine, increases the likelihood that some form of sensitization is present.

Food sensitization should be ruled out by subcutaneous and intradermal skin tests, with all the foods entering into the routine diet of the patient. If these food tests are negative, elimination diets should be tried. One of us<sup>3</sup> reported the same type of reaction occurring with peanuts in a child who

had eczema and asthma, only in this case the experiment was reversed. A small amount of the child's blood serum was injected into the arm of a nonallergic individual, and when peanuts were eaten he noticed a large hivelike swelling over the injected area one and a half hours later. This type of test was first described by Walzer in fish-sensitive patients. This type of synovitis is frequently due to sensitization of the joint tissues, and foods are probably the main cause.

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## Therapeutics

### THE THERAPY OF THE COOK COUNTY HOSPITAL

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NOTE.—In their elaboration, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft for publication. The articles will be continued from time to time in these columns. When completed, the series will be published in book form.—ED.

### THE THERAPY OF ITCHING (PRURITUS)

IN COLLABORATION WITH DR. THEODORE CORNBLEET

The first principle in the treatment of itching is that scratching must be prevented, for scratching starts and maintains a vicious circle. It damages the skin, and the healing of the damage accompanied by itching again incites scratching. The scratching also insemminates and disseminates infection, which in turn makes the itching worse. Merely telling a patient not to scratch does no good when itching is infuriating, although the explanation as to why he must not may help in making him more cooperative. The patient should have some remedy that will relieve the itching at least as well as the scratching does. So detrimental to healing is scratching that, when the patient, e. g., a babe, is absolutely noncooperative, scratching must be made physically impossible by some form of restraint. For instance, in cases of facial infantile eczema a cardboard tube applied round the elbows in such a way that they cannot be flexed will serve the purpose.

There are two fundamentally different modes of attack in this as well as in any other nerve reaction: first, the lessening of irritation and, second, the lessening of irritability. These two are in inverse proportion of importance. The more completely the irritation can be removed, the less attention needs to be paid to irritability, and vice versa. As they are also complementary to each other, they are often well combined in the therapeutic program: for irritation increases irritability and increased irritability augments the effects of irritation.

#### LOCAL PRURITUS

From a practical point of view it is not so much the mode of therapeutic attack as the point of attack that might be employed in the classification of available means of treatment: (1) local measures, (2) systemic measures. These are again in inverse proportion of importance. Obviously, when local measures suffice, general measures are not required; and, the less efficient the local treatment, the more are systemic measures required. In general pruritus, systemic treatment is likely to be of greater importance than local therapy and in localized pruritus local treatment is of the greater importance. Often, these two points of attack are usefully combined.

1. Miller, J. L., and Lewin, Philip: Intermittent Hydrops of the Knee, J. A. M. A. 82:1177 (April 12) 1924.  
2. Rowe, J. A.: Food Allergy, Philadelphia, Lea & Febiger, 1931, p. 374.  
3. Taub, S. J.: Allergy Due to Silk, J. Allergy 1: 539 (Sept.) 1930.

**Local Measures.**—The ideal remedy for the relief of itching is the removal of the cause. When there is a definite skin disease, the causal therapy indicated is employed; e. g., that of skin infestation (q. v.), of eczema (q. v.) or of urticaria (q. v.).

In anal pruritus, one must look most especially for local rectal pathologic conditions, such as hemorrhoids, fistula or fissure and for ringworm, yeast or bacterial skin infection, and for infestation with pinworms, especially in children.

A vaginal discharge may produce anal pruritus.

Vulvar pruritus may be due to local genito-urinary disease, pregnancy, sexual maladjustment, or the menopause. Any one of the causes of rectal pruritus may give rise to vulvar pruritus. It must be understood, however, that all forms of local pruritus, anal as well as vulvar, may be due to any one of the causes of general pruritus (q. v.).

**PRESCRIPTION 1.—Boric Acid Dusting Powder**

R	Boric acid .....	6.00 Gm.
	Zinc stearate .....	30.00 Gm.
	Talcum .....	30.00 Gm.

Apply freely.

Because of the importance of local discharges or infection in maintaining anal and vulvar pruritus, strict cleanliness is the most important measure of hygiene. Thus, it is well to wash the anus after each defecation with 1 per cent dilution of Saponated Cresol Solution and to follow this with thorough drying and a dusting powder (e. g., prescription 1). In vulvar pruritus the liberal powder application should be kept in place by a clean vulvar pad, especially if there is any amount of discharge.

As the removal of the cause may require time and because, even after the cause is removed, its effects tend to persist and as furthermore immediate relief of itching is demanded, remedying the existing pathologic condition is of great practical importance. Itching, like pain—unless purely psychic—is always due to “nutrition minus” of certain nerves; itching is due to “nutrition minus” of the free intra-epithelial nerve endings. This “minus” may be qualitative, as in the poisoning of nerve endings in jaundice or in morphinism and in systemic pruritus in general, or quantitative, as is more commonly the case in localized pruritus as the result of increased tension within the derma, whether this is due to the presence of exudate or of any other disproportion between fluid pressure and epidermal surface rigidity or to the existence of cellular infiltration or of connective tissue overgrowth. If this theory is correct, itching cannot occur without a relatively rigid epidermis and a relatively active blood circulation. Scratching relieves the itching by damaging the epidermis, thus lessening tension. Anything that increases the blood supply increases itching, as does woolen underwear or the removal of clothing at bedtime and the congestion of the skin produced by the warmth of the bed. Accepting this theory as a working hypothesis, one may relieve itching by (1) lessening the blood supply to the skin, (2) soothing the sensory nerve endings, (3) softening the epidermis and (4) depressing the sensory nerves. By a suitable choice or combination of these, any form of pruritus may be relieved, at least temporarily. Most obstinate and difficult to relieve is the itching due to cellular infiltration or to fibrous tissue overgrowth in the derma. Such itching resists other forms of treatment save (5) destruction of the cellular infiltrate or of the affected nerves or tissue. As fibrous tissue overgrowth may become the

final state in any case of long standing pruritus, no matter what its origin, the obvious lesson is that itching must not be permitted to become chronic.

1. **Lessening the Blood Supply to the Skin.**—Because the cooling effect of the evaporation of fluid causes vasoconstriction, evaporating applications to the skin are favorite remedies in pruritus; curiously enough, the application need not be cold. Indeed, cold applications that are followed by reactive hyperemia may aggravate rather than relieve itching.

(a) **Alkaline lotion.** Water, applied as hot as can be borne, by bathing, on a compress, or by sponging and then not drying the skin, is a good antipruritic measure because the heat itself is analgesic and because of the succeeding reactionary vasoconstriction which is prolonged by the cooling effect of the evaporation of fluid. Adding alkali, e. g., about 5 per cent of Sodium Bicarbonate, to hot water increases the antipruritic value of this measure, probably by reason of the epidermis softening effect of alkali. To follow this sponging by dusting the still moist surface liberally with Talcum helps by retaining the moisture on the skin, and possibly also by protecting the sensory nerve endings. Adding 0.5 per cent of menthol to the dusting powder (prescription 2) adds a specific nerve-end depressing effect to the entire procedure. Thus, these measures combine the first four mentioned modes of relieving pruritus in one simple attack. This combination is indicated only in those conditions of itching in which the epidermis itself is not damaged, and when there is no tendency to vesiculation.

**PRESCRIPTION 2.—Mentholated Talcum**

R	Menthol .....	0.50 Gm.
	Alcohol .....	5.00 cc.
	Talcum .....	100.00 Gm.

Use freely as dusting powder.

**PRESCRIPTION 3.—Menthol-Boric Acid Solution**

R	Menthol .....	0.015 Gm.
	Boric acid .....	10.000 Gm.
	Water .....	500.000 cc.

Apply on gauze compress.

(b) **Isotonic lotions.** In conditions in which softening and epidermis-macerating applications are not suitable, as in acute eczema, the addition of from 2 to 4 per cent of Boric Acid (prescription 3) to the water, to make the solution used for the sponging isotonic or hypertonic, overcomes the objection arising from hypotonicity.

(c) **Astringent evaporating lotions.** These are still more suitable for those exudative dermatoses, e. g., “weeping” eczema, in which hot alkaline lotions are contraindicated. When the most acute stage of excessive irritability—which indicates soothing—has passed, compresses of Solution of Aluminum Subacetate diluted 1 to 10 are useful.

2. **Soothing the Nerve Endings.**—For the purpose of soothing the sensory nerve endings of the skin one may use:

- (a) Calamine lotion, if a drying effect is desired, or  
(b) calamine liniment, if emollient action is aimed at.

**PRESCRIPTION 4.—Phenolated Calamine Lotion**

R	Phenol, liquefied .....	0.60 cc.
	Calamine lotion .....	120.00 cc.

Apply freely.

In either case the addition of 0.5 per cent of phenol—the less the better—may increase the antipruritic value of the lotion (prescription 4).

(c) **Films.** These are still more efficient in that they not only protect the skin against the irritation of air and the contact with clothing but also because they

lessen the influx of blood by their pressure and, maybe most especially, because they prevent scratching. The Soft Zinc Glycrogelatin of the National Formulary is not only useful for application as Unna's boot in the treatment of varicose eczema (cf. Therapy of Varicose Veins) but might also be a valuable recourse in other conditions of pruritus. The Paraffin Dressing (cf. Therapy of Burns) may as well be employed in pruritus as in burns. A "drying paste" is useful as a protective varnish on the face in infantile eczema. It may be made more antipruritic, if necessary, by the addition of a small amount of phenol (prescription 5).

#### PRESCRIPTION 5.—Phenolated Drying Paste

℞ Phenol, liquefied .....	0.50 cc.
Tragacanth .....	5.00 Gm.
Glycerin .....	2.00 cc.
Water.....to make	100.00 cc.

Apply to itching part and permit to dry.

When there are excoriations due to scratching, unguent paste treatment should be employed because of its epithelizing effect. One may use Paste of Zinc Oxide for rather localized patches, or the Soft Paste of Zinc Oxide for more extensive application. In either case final liberal dusting with talcum forms a crust that tends to keep the paste in place.

3. *Softening the Epidermis.*—Softening of the epidermis is especially indicated when the skin is harsh and dry, as in senile pruritus. In this condition, brushing the skin with a soft hair brush while the patient is in a warm alkaline bath (sodium bicarbonate one-fourth pound to the tub) may remove an abundance of harsh dead epidermal scales that contribute to maintenance of the itching. Following this with an inunction of Rose Water Ointment leaves the skin in a much more wholesome condition than it was before.

While ointments are useful when the skin is harsh and dry, they should generally be avoided in pruritus of the anus or vulva, as in these locations they are "messy," macerate the skin, and may aggravate the trouble. It is only when extreme dryness prevails in these parts that the sparing use of salves may be permissible.

4. *Depression of the Sensory Nerves.*—(a) By volatile analgesic. This is accomplished by such agents as menthol, phenol and other coal tar derivatives in varying application forms, dependent on the extent of the affliction and the condition of the affected skin. They should be given the patient to be applied in lieu of scratching. The permissible concentration of the analgesic agent depends on the irritability of the surface. When the skin is acutely irritated, they must be employed in great dilution, as they have irritative qualities which may result in aggravation of the irritation and the itching after the nerve depression has worn off. When the skin is not very irritable, they may be employed in considerable concentration, as in the following applications, listed somewhat in order of ascending strength:

#### PRESCRIPTION 6.—Menthol-Phenol Ointment

℞ Menthol .....	0.30 Gm.
Phenol .....	0.60 Gm.
Rose water ointment.....	30.00 Gm.

Apply locally as required, and instead of scratching.

#### PRESCRIPTION 7.—Menthol-Phenol Lotion

℞ Menthol .....	0.30 Gm.
Phenol .....	0.60 Gm.
Alcohol .....	30.00 cc.

Apply locally.

Menthol and Phenol: Ointment (prescription 6) may be ordered in double strength of the active ingredients unless the skin is quite sensitive. Because it is more

cleanly and more easily applied, an alcoholic solution of these (prescription 7) is preferable, if the skin is not in need of an emollient. Menthol had better be omitted in senile pruritus because it may give rise to the complaint of chilliness.

#### PRESCRIPTION 8.—Mentholated Coal Tar Lotion

℞ Menthol .....	0.30 Gm.
Glycerin .....	8.00 cc.
Solution of coal tar.....	60.00 cc.
Solution of calcium hydroxide.....to make	120.00 cc.

Apply to itching surface.

Coal Tar Solution: Usually ordered to be diluted with nine parts of water, Coal Tar Solution may be employed even in full strength or in the form of the mixture given in prescription 8 if the skin is not damaged.

Pigment: Camphorated Phenol may be employed even in full strength, e. g., in the treatment of anal pruritus, without danger of damage to skin or mucous membrane. It is usually strong enough when mixed with an equal part of Zinc Oxide Ointment (prescription 9).

#### PRESCRIPTION 9.—Camphor-Phenol Ointment

℞ Camphorated phenol .....	15.00 Gm.
Zinc oxide ointment.....	15.00 Gm.

Apply locally as often as required.

(b) *Infiltration anesthesia.* Decided temporary relief may be obtained by infiltration of the affected skin with as much as 75 cc. of 0.5 per cent procaine solution, injecting enough to make the entire region edematous. In some cases a single injection suffices to break in on a vicious circle. In others, the treatment has to be repeated at intervals.

Should the itching return too soon after infiltration with a water-soluble anesthetic, one may take recourse to infiltration with an oil-soluble anesthetic of prolonged action, e. g., Nupercaine (N. N. R.) in the form of Gabriel's solution (1930), which has the formula given in prescription 10.

#### PRESCRIPTION 10.—Nupercaine Oil

℞ Nupercaine (base) .....	0.50 Gm.
Phenol .....	1.00 Gm.
Benzyl alcohol .....	10.00 cc.
Oil of sweet almond.....to make	100.00 cc.

Dispense in sterile 5 cc. ampules.

Simmons<sup>1</sup> recommends the following technic for pruritus ani: After cleansing the anal region, 5 cc. of this solution is injected under the itching area. One may inject the posterior quadrant on the first visits and the lateral and anterior quadrants on subsequent visits. The finger should be inserted into the anal canal to guide the direction of the needle and avoid penetration of the rectal mucous membrane, which might cause infection. Pooling of the oily solution should be avoided, as it may lead to painful induration. Intradermal injection may lead to a slough. Contraindications to these injections are local infection (eczema) and possibly idiosyncrasy to the drug (if such exists).

(c) *Division or resection of sensory nerve.* The division or resection of the sensory nerve supplying the affected part is the supreme remedy to be employed, when other measures fail to relieve constant and maddening pruritus due to irremediably damaged skin, although excision of the skin may first be tried provided previously employed roentgen therapy in safe dosage has failed. Removal of the affected skin and mucosa is especially indicated when the presence of leukoplakia renders malignant changes a possibility.

1. Simmons, N. J.: Pruritus Ani—A New Treatment, *Am. J. Digest. Dis. & Nutrition* 2: 53 (March) 1935; *Elimination of Postoperative Pain Following Hemorrhoidectomy*, *New England J. Med.* 214: 20 (Jan. 2) 1936.



**5. Destruction of Cellular Infiltrate by Radiation Therapy.**—This method of treatment of itching may also act in some other way, as it has also been useful in "essential pruritus." Relief may be obtained from a single exposure to 25 roentgens of unfiltered rays. The treatment may be repeated two or three times at intervals of three or four weeks. More must not be taken, to avoid the induction of erythema. Because of their more limited penetration, grenz rays should be preferable when it is necessary to avoid injury to important organs in or under the skin.

**Systemic Measures.**—It is important to remember that strictly localized pruritus may be due to systemic causes and cured by proper care of these; also that systemic treatment which acts by lessening irritability may advantageously be combined with the local measures discussed. It is only for purposes of classification that the discussion of these is undertaken under separate headings.

#### GENERALIZED PRURITUS

Generalized pruritus is said to exist when the condition affects large areas of the body surface. It rarely affects the whole body at one time. As "removing the cause" gives most radical results, this should, of course, always be first attempted.

**1. Causal Treatment.**—The body surface should receive first consideration. Thus, one should always think of scabies and body lice, even in the most genteel.

Excessive dryness of the skin is responsible not only for "senile pruritus" but also for "bath pruritus" and for "winter itch" (pruritus hiemalis). Whenever the skin is dry, the use of soap should be restricted to the hairy parts and the hands and feet. The patient should bathe in the daytime rather than before retiring. Luke-warm rather than hot water should be used for the baths. The skin should be permitted to remain slightly moist after the bath, and a soothing ointment applied immediately after it. Proper moistening of the air of living rooms (between 40 and 60 degrees of relative humidity) is of great importance. Sleeping rooms should be kept cool. Flannel blankets and woolen underwear next to the skin are particularly obnoxious. Cotton or silk undergarments should be worn with a woolen garment over this if desired. Removal to a warm climate during the cold season is, of course, the most radical remedy for the "winter itch."

There is also such a condition as "summer pruritus" due to excessive sweating, and it sometimes occurs as an after-effect of sunburn. Modification of sweating or of skin blood supply (q. v.) may be helpful.

The patient's examination must be all embracing for the practice of causal therapy in pruritus. A partial list of the conditions in which pruritus may be the "presenting symptom" includes diabetes mellitus, liver and kidney disease, disturbances of the gastro-intestinal tract, blood diseases and allergy.

Diabetes mellitus is so important a cause of itching that urinalysis should be one of the first items in the examination of any case of pruritus. It is generally localized at the genitalia, owing to the irritation set up by fermentation of the sugar in the urine, and it disappears promptly when the glycosuria is controlled. Pruritus may also occur in other diseases of metabolism, such as hyperthyroidism, gout or obesity.

Liver and kidney disease are probably next in order. When itching occurs, as it usually does in jaundice, the causal association between the two is obvious. It is possible for liver disturbance to produce itching even

without the presence of frank jaundice. In such cases the bilirubin index may be high. Itching may be a distressing symptom of uremia.

Disturbances of the gastro-intestinal tract, such as constipation and indigestion, may be causes.

Blood diseases, especially leukemia, but also chlorosis, may be accompanied by itching.

Allergy to various foods may give rise to or aggravate pruritus. The foods more commonly concerned are shellfish, highly seasoned dishes, cheese, strawberries, tomatoes, pork and sausage. There may be no demonstrable urticaria and, indeed, the itching may occur almost immediately following ingestion of the food. Itching may occur in serum sickness and be an accompaniment of other allergic states, such as hay fever and asthma.

Some drugs tend to give rise to pruritus, particularly opium, belladonna and cocaine; and an untoward reaction to arsenic may first be indicated by itching of the palms and soles. Abuse of coffee, tea, alcohol and tobacco may be responsible for pruritus.

Elimination of the causative factor, when it is not obvious, may be attempted by diet, by favoring bowel evacuations, by diuresis, and even by "washing of the blood."

(a) Diet: Abstinence from highly seasoned or fatty foods, strong cheeses, tea, coffee, alcohol or tobacco may be helpful. When allergy is suspected, test diets (see Therapy of Urticaria) are indicated. An exclusively milk diet relieves all other forms of dietary allergy, excepting of course that due to milk, which would be aggravated by it.

(b) Bowel evacuation: Saline or alkaline saline catharsis, if there is a tendency to colon stasis (q. v.), should not be omitted from the therapeutic program.

(c) Diuresis: Cool retention enemas of 1 or 2 liters of 2 per cent solution of Sodium Bicarbonate given morning and evening may improve conditions, especially in jaundice.

(d) "Washing of the blood": Removing from 150 to 250 cc. of blood by vein puncture and injecting from 200 to 300 cc. of Physiologic Solution of Sodium Chloride may not so much act by actual removal of poison as by an "alterative" influence.

**2. Modification of Sweat Secretion.**—As not only deficient but also excessive sweat secretion may produce itching, it is not surprising that Pilocarpine Nitrate (8 mg.) as well as Atropine Sulphate (1 mg.) have been advocated in the treatment of pruritus. Even when the condition of the skin does not obviously indicate the one or the other, a trial of a hypodermic injection of either one may be worth while in certain cases, with continuance of oral administration of the dose that gives maximum benefit with a minimal side effect. Addition of the helpful agent to other medication may have a potentizing effect.

**3. Modifications of the Blood Supply.**—(a) Epinephrine. The almost magic effect of the intramuscular injection of Solution of Epinephrine Hydrochloride (0.5 cc.) in the therapy of allergic urticaria justifies its trial in allergic pruritus as well as in other forms in which a diminution of the skin blood supply seems indicated.

(b) Ergotamine tartrate. In a dosage of 1 mg. orally three times daily for several days, ergotamine tartrate has been especially recommended for pruritus of hepatic or renal origin. Several doses are required before the effect is noted; but then the pruritus may

not recur after discontinuance of the drug. Its use must not be continued indefinitely, owing to the danger of ergotism.

(c) Nitrites. These have been found useful in certain cases of general (not localized) pruritus. That vasodilation may be useful in pruritus need not be surprising when one thinks of pruritus as due to "nutrition minus" of skin nerves engendered by excessive intradermal pressure. The lowering of systemic blood pressure may lessen the intradermal tension at the same time as the blood supply to the skin is increased. The relief obtainable from vasoconstrictors, on the other hand, may be assumed to be due to the lessening of intradermal tension by diminution of the blood supply. Tablet of Glyceryl Trinitrate, now official in an average dose of 0.6 mg., dissolved under the tongue, has given relief within five minutes and for from one to two hours. Diluted Erythrityl Tetranitrate (erythrol tetranitrate) in doses of 0.03 Gm. may give within half an hour relief that may last for five or six hours. As the relief of the itching occurs simultaneously with the blushing of the skin and the congestion in the head, one may know that, when relief is not experienced at the onset of these symptoms, the nitrites are not of any use in the particular case. Habituation, which develops after several days and interferes with continuance of the antipruritic action, requires discontinuance of the drug for possibly two days to secure the return of effectiveness.

4. *Influencing of the Central Nervous System.*—The fact that pruritus is akin to pain is well brought out by the fact that analgesics are also, in general, antipruritics. Opiates are a notable exception to this proposition. They are particularly prone to induce or aggravate itching.

(a) Acetylsalicylic Acid in doses of 0.30 Gm. in capsule or tablet form may be given every two to four hours as required. If it is not well borne, on account of diaphoresis, one of the coal tar analgesics such as Aminopyrine (0.30 Gm. capsules or tablets) may serve as a succedaneum.

#### PRESCRIPTION 11.—Bromide

R Potassium bromide . . . . . 30.00 Gm.  
Anise water . . . . . 30.00 cc.  
Syrup of glycyrrhiza . . . . . to make 120.00 cc.  
A teaspoonful or two in milk after meals and at bedtime.

#### PRESCRIPTION 12.—Bromide and Cannabis

R Sodium bromide . . . . . 8.00 Gm.  
Fluidextract of cannabis . . . . . 1.00 cc.  
Iso chlor . . . . . to make 120.00 cc.  
Tablespoonful in water every four hours.

(b) Bromide in 1 to 2 Gm. doses (prescription 11) may lessen nervous irritability. The combination of bromide with cannabis (prescription 12) is synergistic

#### PRESCRIPTION 13.—Phenobarbital and Acetylsalicylic Acid

R Phenobarbital . . . . . 0.50 Gm.  
Acetylsalicylic acid . . . . . 5.00 Gm.  
Divide into fifteen capsules.  
One as required at bed time.

in pruritus in that the latter adds a psychic alternative action to the depressant effect of the bromide.

(c) Hypnotics, e. g., as phenobarbital (0.1 Gm. tablet), should be included in the therapeutic program when itching is worse at night or when it interferes with sleep. As a general rule, when a hypnotic is used alone in sleeplessness due to itching, it must be given in large doses: hence it had better be combined with an analgesic (prescription 13).

(d) The therapy of psychoneurosis (q. v.) is required in proportion to the dominance of neurosis;

but every patient with pruritis needs some psychotherapy. Knowing that "everybody itches more or less" may not be much consolation to one who is driven frantic by itching. It may, however, help some others to bear their affliction with more equanimity. Most especially must pruritus sufferers have driven into their minds the injunction "not to scratch," and to make this possible is the alpha and omega of pruritus therapy.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

### HOGAN SUPER-BREVATHERM SHORT WAVE DIATHERMY UNIT, MODEL 8898 ACCEPTABLE

Manufacturer: McIntosh Electrical Corporation, Chicago.

This unit is designed to produce undamped electric current oscillations of high frequency which are suitable for the production of heat within the body tissues, for surgical tissue cutting and for hyperpyrexia.

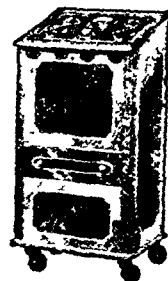
The apparatus is mounted in a wooden cabinet, all component parts being accessible for inspection and repairs. The circuit is of a well known two-tube type, with the two oscillator tubes connected in opposite phase relation. The plate circuits are supplied with direct current, which is obtained from a two-tube mercury vapor rectifier. Two oscillator and two rectifying tubes are employed in this unit.

The patient's circuit is inductively coupled to the plate or output inductance of the oscillator tubes. A variable condenser of the split stator type is used to tune the patient's circuit into electrical resonance with the oscillator. Sufficiently loose coupling between the plate inductance and the inductance of the patient's circuit prevents overload conditions of the tubes. For the regulation of the power output, the primary winding of the plate current transformer is equipped with taps to vary the input current. Under maximum load the power input is about 1,500 watts. Since there is no acceptable method for measuring the output of short wave machines, this value is not stated. A thermocouple amperemeter indicates the relative power output, and maximum readings indicate electrical resonance between oscillator and patient's circuit. The wavelength is approximately 21 meters.

The temperature rises of the transformers, after the machine was operated at full load for two hours, came within the limits of safety prescribed by the Council. Both cuff and pad electrodes are furnished as standard equipment. The shipping weight of the unit is about 200 pounds.

At the request of the Council the machine was investigated and the data submitted for consideration. The tissue heating effect in the human thigh was observed. Cuff electrodes were applied to the thigh: one posterior to the hip, the other anterior to the knee. Thermocouples were introduced into the deep-lying tissues and also into the subcutaneous tissues. They were placed at a point midway between the hip and the knee, or midway between the cuff electrodes, and removed during the time of treatment. After twenty minutes' treatment, the machine being operated at the patient's tolerance, the temperature rise and final temperature (average of five tests) were observed to be somewhat higher than those temperatures obtained by conventional diathermy, which was used as a control. The conventional diathermy currents were applied to the thigh by tinplate electrodes, one on the medial and one on the lateral aspect.

The cuff electrodes used in the investigation were made of metal surrounded by thick protecting felt and enclosed in a

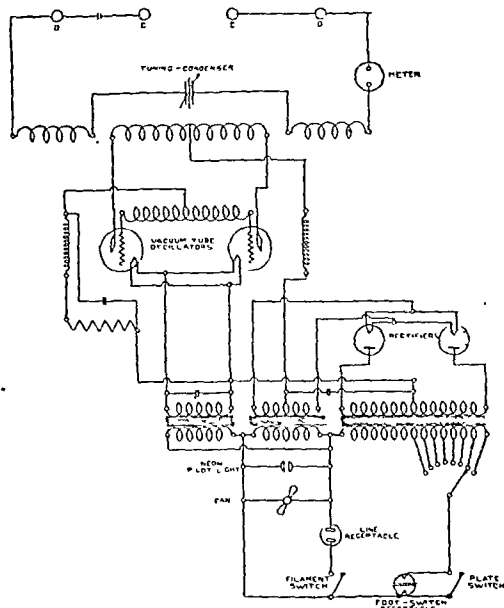


Hogan Super-Brevatherm Short Wave Diathermy.

sateen bag. Several layers of toweling, a felt pad, or both materials, were placed next to the skin to absorb perspiration.

Burns may be produced by this machine, but they may be avoided by ordinary precaution; their likelihood to occur is much less than with conventional diathermy.

This unit was tested in a clinic acceptable to the Council, and there the reports of the investigation were confirmed, and



Schematic diagram of circuit.

the machine was considered as giving satisfactory service for the purpose for which it is intended.

In view of the favorable report of the machine, based on its performance when cuff electrodes were used, the Council on Physical Therapy voted to include the Hogan Super-Brevatherm Short Wave Diathermy Unit, Model 8898, in its list of accepted apparatus.

### SPENCER SUPPORTS ACCEPTABLE

Manufacturer: The Spencer Corset Company, Inc., New Haven, Conn.

Spencer belts, corsets with built-in supports, and bandeaux are recommended by the manufacturer for the following indications: enteroptosis, hernia, sacro-iliac sprain, movable kidney, pregnancy and post partum, postoperative support, and breast conditions. These supports are made for men, women, children and infants.

All Spencer supports, declares the firm, are constructed of nonelastic material and are made to order according to the information submitted by corsétières, the saleswomen for the company. This information consists of a description and measurement of the figure. The boning in Spencer supports is of special steel covered with a material claimed to be impervious to moisture. This boning is called Spencerbone, because it is manufactured exclusively for the firm and from its own formula.

**Spencer Abdominal Corset.**—A corset combined with a supporting section of fabric of proper stiffness, of a size and shape appropriate to the needs of the patient, which is worn inside the corset and adjusted from the outside by means of straps which emerge through slots. Each strap adjusts independently and permits varying degrees of pressure from the bottom to the top of this inner supporting section. Pressure and uplift, according to the firm, can be secured in any amount which the patient can tolerate. Especially designed padding can be used under any part of the section to give local pressure to whatever degree desired. The straps engage with flat buckles so located on the outside of the corset as to bring the strain of the abdominal uplift on the pelvic girdle.

**Spencer Abdominal Belt.**—A garment designed to do the same work as the Spencer Abdominal Supporting Corset; but,

unlike the corset, this abdominal belt is made of a corset back section coupled only to a somewhat larger abdominal supporting section by means of straps and buckles which operate the same as for the corset.

**Spencer Sacro-Iliac Corset.**—A combination corset with an inner belt, which encircles the pelvic girdle and emerges at the front. According to the company, it can be adjusted to varying degrees of pressure by means of straps and buckles. This inner band is adjustable independently of the corset and can be tightened to any desired degree. The corset's particular function is to keep the band from sliding up and out of place on the figure.

While this band is commonly fitted with a pad of proper shape which, when adjusted, rests over the sacrum, different sizes and shapes are made as ordered by the physician.

**Spencer Sacro-Iliac Belt.**—This belt is similar to the Spencer Abdominal Belt, except for the narrow pad and band fitted and adjusted to it. The purpose of it is to hold the sacro-iliac band in place on the figure.

**Buckle Front Corset for Back Support.**—This garment, states the manufacturer, is used when a fair degree of immobility of that part of the spine which it can control is desired. It is fitted with rigid or semirigid steels for each side of the spine. The garment is fitted with strong adjustable shoulder straps which, coming up from the back, pass over the shoulder and under the arm, fastening far enough back to limit the motion of the shoulders. Steels of lighter weight are used at the sides and front.

**Spencer Belt for Inguinal Hernia.**—A belt, according to the firm, which will control small, easily reducible, inguinal hernias. The belt itself provides support and uplift. Perineal straps are adjusted to cloth tabs attached to the bottom edge of the front part of the belt. Attached to these cloth tabs are firm, softly finished pads, placed to give the necessary pressure on the opening.

**Spencer Maternity Corset.**—An especially designed corset with lacers at front, back, and sides to provide for changes in the figure during pregnancy. It is designed either with or without the inner abdominal support.

**Spencer Maternity Belt.**—A Spencer abdominal belt, with an additional back lacer adjustment which provides for figure changes.

**Style 400 Bandeau.**—A bandeau designed to give bust support and uplift. Bust pockets are made of slightly stretchy material, shaped to provide uplift without constriction. Material below bust does not stretch. Made to the patient's bust and waist measurements.

**Style 700 Bandeau.**—A bandeau made of soft material, firm enough to provide bust support and uplift. Made to patient's bust and waist measurements.

**Style 800 Bandeau.**—A bandeau made of soft material, firm enough to give bust support and uplift. Suitable for those preferring a short bandeau.

**Pads.**—Pads which supply specific local pressure are made to sizes and thicknesses as specified by the physician.

According to the Spencer Corset Company, these supports are sold through their sales representatives (women), known as Spencer corsétières. The corsétières are not permitted to diagnose; they are required to cooperate with the physician by fitting the type of support he prescribes. They are also instructed to arrange for the physician's inspection of a completed and fitted garment, whenever it is possible. All garments are designed for the individual patient. The company claims that no stock garments are made or sold.

The Spencer Corset Company has informed the Council that it has never paid commissions or rebated any percentage of the selling price to physicians on any of its merchandise, and assures the Council that it will not do so in the future. Furthermore, the manufacturer has stated that the corsétières are under instructions not to pay commissions or gratuities of any kind and that any violation of this rule would cause them to lose their franchises.

These garments were examined by a consultant who has had a large experience with such supports. He reported that the supports gave satisfactory service.

The Council therefore voted to include the Spencer Supports in its list of accepted devices.

## Council on Pharmacy and Chemistry

### REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

#### ANDROSTINE-CIBA NOT ACCEPTABLE FOR N. N. R.

Under the name "Androstine" the Ciba Company has been promoting three preparations, all claimed to be testicular extracts. Circulars recently distributed to the medical profession make many extravagant and unwarranted claims for this product; the Ciba Company has not submitted the product for the Council's consideration, and this report is made on the Council's own initiative.

According to the recent advertising, Androstine is represented to be

"a total testicular extract . . . composed of two fractions, the hydrosoluble, which contains the active principles of the spermatid gland, and the liposoluble, extracted from the interstitial gland."

It is claimed that

"The administration of Androstine to castrated animals provokes certain reactions, of which the most important is the increase in size of the capon's comb: this is the reaction employed for the standardization of Androstine."

Although the firm implies that Androstine is standardized by the capon comb-growth reaction, the marketed solutions are described as representing, in the combined contents of one ampule "A" (hydrosoluble) and one ampule "B" (liposoluble) (each 1.5 cc.), "the active hydrosoluble and liposoluble principles contained in 16 grams of fresh gland." There is no statement of potency in capon units. In addition to the ampules the firm markets tablets each claimed to represent "the active hydrosoluble and liposoluble principles contained in 8 grams of fresh gland."

The claimed indications for Androstine are:

"Testicular insufficiency, prostatic hypertrophy, impotence, infantilism, premature senility, obesity of endocrine origin, climacteric of man, prostatism, neuroses and psychoses of genital origin."

It is claimed further that:

"Androstine stimulates basal metabolism and relieves nervous and psychical troubles of sexual origin."

The prescribed dosage for these conditions is "3 to 8 tablets a day . . . or the contents of one ampule injected intramuscularly, using ampules A and B alternately."

A competent investigator communicated to the Council the results of assays made on both injectable forms of "Androstine." The investigator reported (in part) as follows:

"We gave each caponized rooster the amount recommended for one week's treatment of humans and obtained no increase in comb growth. Therefore I think we can say that both of their fractions, as supplied to us, contain less than one cock unit per 3 cc. of substance."

The following more detailed statement was submitted later:

"Of the ampules of Androstine which we had we made the following tests:

"The first set of capons were each injected with 1.5 cc. of ampules A and B on alternate days for six days. The reaction obtained was less than 1 cock unit. Another group were each given 4.5 cc. of ampule A in 3 divided doses. The same thing was done with ampule B. In both of the latter instances no reaction occurred. Therefore we had no evidence from our assay that there was any appreciable amount of male hormone in the doses prescribed."

It appears, therefore, that Androstine-Ciba is practically inactive with respect to its content of comb-growth-stimulating substance. As the latter principle is the only substance in testis extracts known at present from which any essential physiologic effect or possible therapeutic benefit might be obtained, the claims made for Androstine-Ciba are obviously unwarranted. Even if Androstine actually contained an appreciable amount of testis hormone, the clinical use of this principle is so poorly established that the claims made by the Ciba Company would still be unsupported by adequate evidence.

The Council declared Androstine-Ciba unacceptable for N. N. R. because it represents an irrational combination of inactive preparations, marketed with unwarranted and misleading claims.

## NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

#### DIGIFOLINE-CIBA (See New and Nonofficial Remedies 1935, p. 165).

The following dosage form has been accepted:

Ampules Digifoline Ciba. Each ampule contains 2 cubic centimeters of a 0.1% solution of digifoline in benzyl alcohol. Ciba equivalent to 0.1 Gm. (1½ grains) of digifoline. The solution is standardized by the Hatcher and Brody cat method so that each ampule represents one cat unit. It contains neither alcohol nor glycerin.

#### BISMUTH SODIUM TARTRATE-SEARLE (See New and Nonofficial Remedies, 1935, page 122).

The following dosage forms have been accepted:

Ampoules Bismuth Sodium Tartrate-Searle, 3 per cent, 2 cc.—Bismuth Sodium Tartrate-Searle, 0.060 Gm.; benzyl alcohol, 0.040 Gm., and sucrose, 0.50 Gm., in distilled water to make 2 cc.

Solution Bismuth Sodium Tartrate-Searle, 3 per cent, 60 cc. vial.—An aqueous solution containing in each 2 cc. bismuth sodium tartrate-Searle, 0.060 Gm.; benzyl alcohol, 0.040 Gm., and sucrose, 0.50 Gm.

## CORRECTION

Refined and Concentrated Antipneumococcic Serum Type VII-Lederle.—In the preliminary report of the Council (THE JOURNAL, May 2, p. 1564), first paragraph, last sentence of the paragraph, the statement ". . . type VIII includes a typical type III" should read ". . . type VIII includes atypical type III."

## Committee on Foods

### VITAMIN D MILK

#### THE RELATIVE VALUE OF DIFFERENT VARIETIES OF VITAMIN D MILK FOR INFANTS: A CRITICAL INTERPRETATIVE REVIEW

PHILIP C. JEANS, M.D.  
IOWA CITY

(Concluded from page 2069)

#### CLINICAL OBSERVATIONS

In the abstracts that follow, the quantities of vitamin D are stated in terms of U. S. P. or International units. In most instances conversion from other unitage statements has been necessary. It is to be recognized that conversion factors are to some extent arbitrary and that the results by the older methods of assay vary in different laboratories. The variations are presumably due to factors beyond the control of the most careful experimenters and may be so great as to lead to the conclusion that the older methods are inaccurate. No doubt some of the confusion that now exists concerning the relative values of vitamin D from different sources is dependent on the inaccuracies of assay of this vitamin by the older methods.

Daniels, Stearns and Hutton,<sup>22</sup> 1929: This was an inpatient balance study in which slightly better retentions of calcium and slightly poorer retentions of phosphorus were obtained with irradiated milk than with 5 cc. of cod liver oil. The authors conclude that cod liver oil in the amount used was less effective than irradiated milk. It is the reviewer's interpretation that the retention values represent a low vitamin D intake for both the cod liver oil and the irradiated milk groups. Calcium retentions of from 35 to 39 mg. per kilogram are about what may be expected from approximately

22. Daniels, Amy L.; Stearns, Genevieve, and Hutton, Mary K.: Calcium and Phosphorus Metabolism in Artificially Fed Infants, *Am. J. Dis. Child.* 37: 296 (Feb.) 1929.

135 units of vitamin D and the milk intake stated,<sup>16</sup> and considerably less than approximately 50 mg. per kilogram to be expected when from 340 to 350 units (one teaspoonful of cod liver oil) is given.<sup>23</sup> In the study under consideration the potency of none of the vitamin D preparations was determined. The milk was irradiated under a quartz lamp for a period sufficient to have a strong flavor develop, and the cod liver oil was an unrefined product purchased especially because of crudeness.<sup>24</sup> No conclusions can be drawn from this study for the purpose of this review.

Barnes, Brady and James,<sup>25</sup> 1930: In an outpatient study, rickets was cured or prevented in 95 per cent of sixty-four babies receiving 840 units of vitamin D daily as cod liver oil. At the end of the study, 98 per cent of the babies were either well or benefited. Rickets was cured or prevented in only 44 per cent of fifty-seven babies receiving 750 units of vitamin D as irradiated ergosterol. The results in the latter group "were not significantly better than those for the control group of untreated subjects." The cod liver oil and viosterol used were assayed for vitamin D content. Roentgenograms and serum calcium and phosphorus were the criteria. Lack of cooperation is stated for the mother of one of the two babies who developed rickets on the cod liver oil regimen.

De Sanctis and Craig,<sup>26</sup> 1930: This study is difficult to interpret because the potency of the cod liver oil was only estimated and rickets was diagnosed entirely by means of clinical signs. With viosterol at a daily level of 810 units of vitamin D, rickets developed in 23 per cent of the babies. With cod liver oil at an estimated vitamin D level of from 380 to 460 units of vitamin D daily, rickets developed in 3 per cent of the babies. Subsequent reports by the same authors give essentially the same type of results.

Hess, Lewis and Rivkin,<sup>27</sup> 1930: In this preventive study sixty infants from 4 to 12 months of age and housed in an institution were given 10 or 20 drops daily of viosterol in oil, beginning in the autumn and ending in March. It is estimated from data given by Bills<sup>28</sup> that 10 drops of viosterol in oil contained 2,860 units. The babies were outdoors almost daily. The proportion of infants receiving either dosage is not stated. The criteria were physical examinations from time to time and roentgenograms and calcium and phosphorus levels in the blood at the end of the study. The authors state that the type of disorder generally recognized as rickets was almost completely prevented but that as judged by the more refined methods the protection was not absolute. Of the entire group, ten developed mild rickets; two of these received 10 drops of viosterol in oil and eight received 20 drops. When the cases of clinical rickets are excluded and only those with roentgenographic rickets are considered, there remained three infants with slight rickets and one with slight to moderate rickets, all having received 20 drops

of viosterol in oil. The authors conclude that the dosage employed in this study (5,700 units) was inadequate.

The baby with slight to moderate rickets after the ingestion of 20 drops daily of viosterol in oil for two and one-half months was given six teaspoonfuls of cod liver oil daily. Slight healing was noted in ten days and complete healing in three weeks. The authors state that the 20 drops of viosterol in oil were equivalent to ten teaspoonfuls of cod liver oil on a rat unit basis. In this instance rapid healing was produced by approximately 2,100 units as cod liver oil in an infant whose rickets developed while he was receiving approximately 5,700 units as viosterol.

Hess, Poncher, Dale and Klein,<sup>29</sup> 1930: Viosterol in oil (286 units to the drop<sup>28</sup>) was administered in an outpatient preventive experiment to fifty-one infants in doses of 1, 2, 3, 5, 10, 15 and 20 drops daily. Cod liver oil was given to forty-one infants in doses of 1, 2 and 3 teaspoonfuls and 2 tablespoonfuls daily. The prematurely born infants of the study are excluded from this discussion. The only infant of the entire group who developed roentgenographic rickets was one of seventeen receiving two teaspoonfuls of cod liver oil daily. A distaste for cod liver oil was noted in this case. It is stated that ten drops of viosterol in oil (2,860 units) was the smallest dose that prevented a fall in both the calcium and the phosphorus of the blood from the first to the later months of the first year of life. This amount is stated as the minimum dose for prophylaxis.

Apparently the lowering of the blood values for calcium and phosphorus represented variations within the normal range, in some instances the later values being slightly less than earlier ones, but still good values. Roentgenographic rickets did not develop in any of six infants receiving one drop of viosterol in oil (286 units) or in any of seven infants receiving one teaspoonful of cod liver oil (approximately 350 units<sup>28</sup>), while rickets was evident in nine of thirty-four control infants.

Hess, Lewis, McLeod and Thomas,<sup>30</sup> 1931: This was an outpatient preventive and curative study of milk from cows fed irradiated yeast and from cows fed irradiated ergosterol. Roentgenograms were used as the criterion. Each variety of milk was produced at levels of 215 and 430 units of vitamin D to the quart and was fed to four groups of infants at a constant level of approximately 24 ounces daily. The vitamin D intake was approximately 160 and 320 units daily. The study group consisted of infants from 1½ to 6 months of age and the observations were made from January to March inclusive. "Thirty-three of the infants had previously been getting cod liver oil, twenty-three of the preventive group and ten of the rachitic group, but this was discontinued, although the amounts were so small as to be inconsequential." The data for the preventive study are not given, but it is stated that rickets was prevented in all infants except two of an unstated number receiving 160 units daily as "yeast milk." Prevention was successful with 160 units as "viosterol milk" in an unstated number of infants, in sixteen infants receiving 320 units as "yeast milk" and in seventeen receiving 320 units as "viosterol milk." The curative study group included thirteen infants; three

23. Jeans, P. C., and Stearns, Genevieve: Growth and Retentions of Calcium, Phosphorus and Nitrogen of Infants Fed Evaporated Milk, *Am. J. Dis. Child.* 46: 69 (July) 1933. Nelson, Martha, V. K.: Calcium and Phosphorus Metabolism of Infants Receiving Undiluted Milk, *ibid.* 42: 1090 (Nov.) 1931.

24. Personal communication from one of the authors.

25. Barnes, D. J.; Brady, M. J., and James, E. M.: The Comparative Value of Irradiated Ergosterol and Cod Liver Oil as a Prophylactic Antirachitic Agent When Given in Equivalent Dosage According to Rat Units of Vitamin D, *Am. J. Dis. Child.* 30: 45 (Jan.) 1930.

26. De Sanctis, A. G., and Craig, J. D.: Comparative Value of Viosterol and Cod Liver Oil as Prophylactic Antirachitic Agents, *J. A. M. A.* 94: 1285 (April 26) 1930.

27. Hess, A. F.; Lewis, J. M., and Rivkin, Helen: Newer Aspects of the Therapeutics of Viosterol (Irradiated Ergosterol), *J. A. M. A.* 94: 1855 (June 14) 1930.

28. Bills, C. E.: *Physiol. Rev.* 15: 1 (Jan.) 1935.

29. Hess, J. H.; Poncher, H. G.; Dale, M. L., and Klein, R. I.: Viosterol (Irradiated Ergosterol), *J. A. M. A.* 95: 316 (Aug. 2) 1930.

30. Hess, A. F.; Lewis, J. M.; MacLeod, Florence L., and Thomas, B. H.: Antirachitic Potency of the Milk of Cows Fed Irradiated Yeast or Ergosterol, *J. A. M. A.* 97: 370 (Aug. 8) 1931.

in each of the two groups receiving "yeast milk" and two and five infants respectively in the groups receiving 160 and 320 units as "viosterol milk." In two of the three infants receiving 160 units as "yeast milk" the rickets became worse for a period of from one to two months before signs of healing were noted. In all other infants healing was marked or complete at the close of the experiment. No difference is noted between the 160 and the 320 unit "viosterol milk" groups or between either of these groups and the 320 unit "yeast milk" group. Accurate comparison of the relative values of these two varieties of milk does not seem possible. Inferiority of 160 units as "yeast milk" is indicated.

Wyman and Butler,<sup>31</sup> 1932: This was an inpatient curative study of two infants and two children with advanced active rickets. They were kept for a control period of from ten to twenty-three days without antirachitic agents. Serum calcium and phosphorus and roentgenograms were used to determine the amount of healing. During the experimental period the only antirachitic agent used was from 32 to 40 ounces of "yeast milk." The unitage of the milk is not stated, but a succeeding article<sup>32</sup> reports the potency at 430 units to the quart. One of the four subjects showed some small degree of healing in the control period. This child was given pasteurized "yeast milk" and later "yeast milk" boiled for five minutes. The rate of healing was increased over that of the preliminary period. The remaining three children showed evidence of deposition of bone demonstrable by roentgenograms within two weeks of beginning treatment. The authors conclude that "yeast milk" is an effective source of antirachitic substance.

Hess and Lewis,<sup>33</sup> 1932: The study group consisted of ninety-eight infants from 1½ to 6 months of age, mostly Negroes. A few of the babies were in an orphanage, but the majority were outpatients. The study was both preventive and curative and was carried on from January to April. The criterion was roentgenograms. The babies received from 24 to 32 ounces of irradiated milk daily, containing 135 units of vitamin D to the quart. The preventive study concerned thirty-six infants, including one prematurely born, without roentgenographic evidence of rickets at the beginning of the study. Of the remaining sixty-two infants, fourteen had roentgenologic evidence of rickets and forty-eight had clinical signs of rickets without roentgenologic changes. All the infants with roentgenologic evidence of rickets showed signs of healing within from four to six weeks; four of these had not healed completely at the end of the experiment. In the ten cases in which the rickets healed, the average time for healing was fifty-five days. In the discussion of the preventive experiment the authors mention the occurrence of rickets in only the prematurely born baby. The authors conclude that irradiated milk is highly satisfactory both from a prophylactic and from a curative point of view. An examination of the tabular data reveals that in addition to the prematurely born baby, two others (E. H. and P. U.) developed rickets six weeks and two months after the start of the experiment. Because of these two cases the conclusion would seem warranted that irradiated milk was not completely protective against rickets even for full term infants.

Gerstenberger and Horesh,<sup>34</sup> 1932: Two hospitalized rachitic infants were fed 500 cc. daily of vitamin D milk produced by feeding Holstein cows 540,000 units of vitamin D daily as irradiated ergosterol. The unitage of the milk was not stated, but the fat of the milk contained 6.75 units per gram. Assuming that the milk had a fat content of 4 per cent, it may be estimated that the infants received 135 units daily. The vitamin D milk was supplemented with ordinary skimmed milk. These two infants had slight evidences of healing as shown by roentgenograms in three and four weeks respectively, but the process had not healed when the experiment was forced to close after ten and eleven weeks. The blood phosphorus had not reached a normal value in either child by ten weeks. It seems fair to conclude that the level of vitamin D fed approached closely or was below the minimum curative dose.

Mitchell, Eiman, Whipple and Stokes,<sup>35</sup> 1932: This was a study of irradiated milk and milk from irradiated cows, conducted from February to October. The babies were admitted to the study from February to April and each baby was studied from six to eight months. The infants were kept indoors except for three months in the summer, when they were outdoors for two hours daily in a low-roofed, screened pavilion so placed with reference to surrounding buildings that no direct sun touched it and skylight was also excluded. All antirachitic agents were excluded for six weeks before the experiment. The irradiated milk used contained 175 units to the quart as determined by assay of the separated fat. The irradiated milk group consisted of thirteen infants with no roentgenologic evidence of rickets. Roentgenograms were made at regular intervals, but only the final results (October) are recorded. The tabulated data show two children with mild and one child with moderate rickets, all healed. It is stated also that "a small group of markedly rachitic infants have been treated in the ward of the University and Children's Hospitals with irradiated milk as the only antirachitic agent. Prompt healing has occurred in each instance."

The milk from irradiated cows contained 60 units of vitamin D to the quart as determined by assay of the separated fat. The experimental group included twenty infants with no roentgenologic evidence of rickets and one with moderate rickets. The tabulated results of the preventive experiment show three infants with mild and three with moderate rickets, all healed. In the curative experiment the rickets healed, though slowly. The amount of vitamin D received by this group is not stated, but the statement is made that the 95 to 110 units which the youngest babies in the 1932 study of Hess and Lewis must have received is not far in excess of the number of units administered to this group of twenty-one infants. The authors state that the twenty infants of this preventive study were protected.

The authors say: "It is customary in the institution to give from one-half to one teaspoonful of cod liver oil daily and among the older infants and young children the presence of moderate rickets is seen frequently, and severe rickets occasionally." It would be most interesting if this observation were confirmed by a controlled experiment.

On the basis of the data given, the conclusion seems justifiable that neither of the milks studied was completely protective. Evidently rickets developed in both.

31. Wyman, E. T., and Butler, A. M.: Antirachitic Value of Milk from Cows Fed Irradiated Yeast, *Am. J. Dis. Child.* 43:1509 (June) 1932.

32. Wyman, E. T.: *New England J. Med.* 209:889 (Nov. 2) 1933.

33. Hess, A. F., and Lewis, J. M.: Milk Irradiated by the Carbon Arc Lamp, *J. A. M. A.* 99:647 (Aug. 20) 1932.

34. Gerstenberger, H. J., and Horesh, A. J.: *J. Nutrition* 5:479 (Sept.) 1932.

35. Mitchell, J. M.; Eiman, John; Whipple, Dorothy V., and Stokes, Joseph, Jr.: *Am. J. Pub. Health* 22:1220 (Dec.) 1932.



groups and was healed by October. The reviewer is leaving out of consideration any possible influence indirect summer sunshine may have had, and the unusually high vitamin D unitage of the irradiated milk.

Barnes,<sup>36</sup> 1933: This was an outpatient curative study, roentgenograms being used as the criterion, in which milk fortified with 400 units of a vitamin D concentrate (Vitex) to the quart was given as the sole antirachitic agent in treating fifteen rachitic infants. The amounts of vitamin D ingested were from 300 to 400 units daily. All the infants recovered promptly. No individual data are given. From this study it may be concluded that cod liver oil concentrate milk with 400 units to the quart will bring about complete healing of rickets under the unrecorded conditions of this experiment.

Hess and Lewis,<sup>37</sup> 1933: This was an outpatient, winter, curative study of irradiated milk, "yeast milk," viosterol in oil and cod liver oil. A large proportion of the infants were Negroes, mostly Puerto Ricans. The babies were from 2 to 17 months of age. Irradiated milk with from 135 to 160 units of vitamin D to the quart was fed at levels of 115 and 75 units (24 and 16 ounces of milk). The criterion was roentgenograms. The 115 unit group included four infants of 17, 13, 9 and 4 months of age. The three older infants had severe rickets, and after four weeks of feeding with irradiated milk the healing was recorded as 3 plus and 2 plus. The youngest infant had slight rickets and the healing was recorded as 1 plus. The 75 unit group included six infants of 9, 9, 6, 4, 3 and 2½ months of age. The 6 months old infants had marked rickets and the healing was questionable. One 9 months old infant had moderate rickets and the healing was 1½ plus. The remaining infants had slight rickets and the healing after four weeks was 2, 1½, 1 and 1 plus.

In the study of "yeast milk" two groups of five infants each were given 24 ounces daily of milk containing 325 and 215 units of vitamin D to the quart respectively. The two groups received 245 and 160 units daily respectively. The five infants of the 245 unit group were 8, 6, 5, 6 and 4 months of age. At the start the rickets was moderate in three and slight to moderate in two infants. After four weeks the healing was 2½, 2, 1½, 1 and 1 plus. The infants of the 160 unit group were 11, 5, 6, 5 and 6 months of age. At the start the rickets was moderate in two, slight to moderate in one and slight in two. After four weeks the healing was 2, 2, 1, 1½ plus and 0. Healing was present in six weeks in the baby who showed no healing at four weeks.

In the study of viosterol preparations eight babies from 2 to 12 months of age were given 865 units daily (as viosterol in oil). The amount of milk is not stated. On the assumption that the amount of milk was the same as for most of the associated observations, viosterol showed a distinct inferiority as compared with irradiated milk and "yeast milk." The 865 units as viosterol permitted one-third as much healing as did 115 units as irradiated milk and one-half as much as 160 units as "yeast milk."

The results with cod liver oil were discarded by the authors because they were irregular and unsatisfactory. The authors concluded that irradiated milk has about twice the effectiveness of "yeast milk" and fifteen times the effectiveness of viosterol on the basis of equal unitage. Their conclusions otherwise, as based on the data presented, cannot be determined for the reason

that the discussion of the vitamin D situation is based on all the previous experience of these authors.

From the data presented it is obvious that irradiated milk with from 135 to 160 units to the quart produces improvement in rickets. A valid comparison between the 75 unit irradiated milk group and the other groups is difficult for the reason that the milk intake of the 75 unit group was reduced in proportion to the vitamin D reduction. When the healing results are averaged, only a slight advantage is evident in favor of the larger over the smaller unitage of "yeast milk," the difference between 1.3 and 1.6 plus. When the 115 unit irradiated milk group is compared with the 160 unit "yeast milk" group, there appears to be two-thirds as much healing in the "yeast milk" group with four-thirds the amount of vitamin D. Thus it may be considered that for these two groups of babies irradiated milk seems approximately twice as effective as "yeast milk." It may be concluded also that 24 ounces of "yeast milk" containing either 215 or 325 units of vitamin D to the quart produces improvement in rachitic infants, the latter being somewhat more effective.

In this and other publications by these authors, comparisons are made between the various antirachitic agents as regards relative effectiveness for man. Among the agents compared is cod liver oil. These comparisons, especially of irradiated milk with cod liver oil, have been quoted extensively. For comparison it would seem desirable that the values to be compared be determined with some degree of accuracy. So far as the reviewer can ascertain, these authors have determined neither the minimum protective nor the minimum curative dose of cod liver oil, but a value has been assigned to this substance and the assumed value has been used for comparison. If actual data available from other sources indicate conclusions at variance with those of these authors as regards cod liver oil, it seems appropriate to give preference to the conclusions based on data.

Wyman,<sup>38</sup> 1933: This was a metabolic study of a 16½ months old rachitic infant who was given "yeast milk" containing 430 units of vitamin D to the quart in amounts of from 940 to 1,180 cc. (430 to 540 units) daily. The control period was in April and the experimental period from April 23 to June 9. The serum calcium and phosphorus at the end of the control period were 9.7 and 2.4 mg. per hundred cubic centimeters respectively; after twelve days of the experimental period the values became 11.8 and 5.5 mg. respectively. The retentions of calcium and phosphorus in the control period were 0.078 and 0.020 Gm. daily, and during the experimental period 0.855 and 0.592 Gm. These results indicate that "yeast milk" with 430 units of vitamin D to the quart allows ample for good healing of rickets when the infant receives a quart or more of milk. The increase in serum calcium and phosphorus is very satisfactory for the time allowed. The retention indicates rapid deposition of calcium.

Kramer and Gittleman,<sup>38</sup> 1933: This was an inpatient curative study comparing irradiated milk and milk from cows fed irradiated yeast. The criteria consisted of roentgenograms and determinations of the calcium and phosphorus of the serum. The study was carried into early summer. Most of the infants were Negroes; all were housed in such a manner as to minimize the effect of sunshine, and the results with control patients indicated a negligible effect from extraneous vitamin D

36. Barnes, D. J.: *J. Michigan State M. Soc.* 32:242 (April) 1933.  
37. Hess, A. F., and Lewis, J. M.: *An Appraisal of Antirachitics in Terms of Rat and Clinical Units*, *J. A. M. A.* 101:181 (July 15) 1933.

38. Kramer, Benjamin, and Gittleman, J. F.: *New England J. Med.* 209:906 (Nov. 2) 1933.

factors. Thirteen infants from 3 to 22 months of age were chosen as subjects and were kept without antirachitic treatment for a period to preclude spontaneous healing. Three infants showed evidence of healing in the preliminary period. The remaining ten infants were used for the experiment. Each infant ingested 1 quart of milk daily. Two infants received "yeast milk" containing 150 units; three received "yeast milk" containing 110; three received irradiated milk at the 150 unit and two at the 110 unit level. At the levels fed, the authors observed no significant difference in effectiveness between "yeast milk" and irradiated milk.

This was a well controlled experiment. Whether significant or not, it is of interest to note the ratios of effectiveness as determined by the time required to produce the first signs of healing by roentgen rays. At each level the irradiated milk showed a slight superiority over the "yeast milk." For the 150 unit groups the ratio was 1:1.4 and for the 110 unit groups 1:1.45. At the same time the expected differences appear between 110 and 150 units of each group. The 110 unit irradiated milk produced approximately the same initial healing results as the 150 unit "yeast milk." The experiment was not continued to complete healing, though the healing was far advanced in those cases in which it was not complete. The blood calcium and phosphorus values were not yet normal in some of the infants at the close of the experiment. Failure to produce normal values after from one to one and one-half months of treatment indicates a relatively low degree of effectiveness.

Jeans and Stearns,<sup>39</sup> 1934: This was an inpatient, metabolic, preventive study. The study group included seven infants from 3 weeks to 15 months of age. Irradiated evaporated milk, evaporated milk with cod liver oil concentrate (Vitex or Zucker concentrate) and evaporated milk together with cod liver oil given separately were the three diets used for the observations. Food intakes were known accurately. Each of the three experimental diets was given to a group of infants of the same age and milk intake; in the course of the observations, each infant received each diet in turn. The criteria used were calcium retention, rates of growth, roentgenograms and serum calcium and phosphorus. The study included forty metabolic periods. The youngest infants received only 60 units of vitamin D daily at the beginning of the study; by 16 weeks of age all the infants were receiving 135 units daily. During the study, no infant developed rickets. The calcium retentions on the three diets showed the same range. No source of vitamin D proved superior in any way to either of the other two as regards retentions. The average calcium retention of the group was lower by 10 mg. per kilogram than the retention observed with infants given the same milk intakes per kilogram but 340 units of vitamin D as cod liver oil. The growth and development of the study group was definitely slower than in control groups given 340 units of vitamin D. The authors conclude that the three sources of vitamin D studied are apparently equivalent, unit for unit. It is implied also that 135 units of vitamin D to the quart of reconstituted evaporated milk does not allow sufficient intake of vitamin D to permit the best development of infants, even though it is indicated that this amount of vitamin D will prevent rickets.

Wilson,<sup>40</sup> 1934: This was a clinical outpatient study of cod liver oil concentrate (Vitex) milk containing

400 units to the quart. The study group consisted of thirty-three infants from 6 to 13 weeks of age at the start, including two pairs of twins, three prematurely born and one infant probably born prematurely. With one exception, none had had antirachitic treatment before the test period. The feeding was undiluted milk with from 8 to 10 per cent added sugar. The milk ingestion varied from 17 to 32 ounces daily (215 to 400 units). The criteria consisted of monthly roentgenograms and body weights and lengths. The progress and general development of the infants were generally normal and satisfactory. All had attained at least the average length and weight for their ages before the end of the study. Musculature and appearance were excellent. Some of the infants developed what is termed mild or doubtful rickets; for the purpose of this review and for reasons stated in the preceding discussion, these cases are classed as normal. Two infants developed rickets of moderate and significant severity. One of these two infants was "probably premature." Prematurity might be a partial explanation of the result even though the regimen prevented rickets in three other babies prematurely born and in two pairs of twins. The other rachitic infant developed rickets in a home with such poor conditions that removal from the home became desirable; it recovered from rickets very promptly after removal while receiving vitamin D milk as the only antirachitic agent. The rapid recovery suggests strongly that the previous intake of vitamin D milk may have been different from that which was assumed. Accepting these two cases of rickets at their face value, the study shows that cod liver oil concentrate milk containing 400 units of vitamin D to the quart prevented rickets in twenty-eight of twenty-nine full term infants and in three of four infants prematurely born. The rapid recovery of the one full term infant from rickets after it was brought under better control favors holding in abeyance the full acceptance of this case.

Drake, Tisdall and Brown,<sup>41</sup> 1934: This was an outpatient preventive study carried on from October to May. It concerned the effects of cod liver oil, viosterol and irradiated milk. Roentgenograms were the criterion. Growth in weight was reported as normal, and above or below normal. A group of 137 infants received cod liver oil; one infant receiving two teaspoonfuls (700 units) and two receiving three teaspoonfuls (1,050 units) developed moderate or marked rickets; none receiving one teaspoonful (350 units) developed this degree of rickets. A group of 186 infants received from 270 to 2,160 units of vitamin D as viosterol in oil. Of these no infant developed moderate or marked rickets at any level fed. A group of 141 infants received irradiated milk. None developed moderate or marked rickets. Thirty-eight of these infants under 4 months of age at the beginning of the experiment received 20 ounces of milk (95 units). The absence of moderate rickets in this group is contrasted with observations on thirty-one untreated infants, four of whom developed moderate or marked rickets. The authors do not draw any comparative conclusions concerning the relative values of the various sources of vitamin D, nor do such comparisons seem possible because the three types employed were not given in similar unitage. No distinction is made between babies breast fed and those artificially fed except in the irradiated milk group. Some of the infants received egg yolk. This study is illustrative of the weaknesses

39. Jeans, P. C., and Stearns, Genevieve: *Proc. Soc. Exper. Biol. & Med.* 31: 1159 (June) 1934.

40. Wilson, W. R.: *Prevention of Rickets by Milk Fortified with Vitamin D from Cod Liver Oil*, J. A. M. A. 102: 1824 (June 2) 1934.

41. Drake, T. G. H.; Tisdall, F. F., and Brown, A. G.: *Canad. M. A. J.* 31: 368 (Oct.) 1934.

inherent in outpatient studies in general. One might infer that 95 units as irradiated milk is superior to 1,050 units as cod liver oil, though such an inference is invalidated by the results with 350 units as cod liver oil. A reasonable conclusion is that irradiated milk was apparently effective in preventing rickets, as was also cod liver oil in the amount of one teaspoonful daily (350 units) and viosterol in oil at the level of 270 units daily.

Barnes,<sup>42</sup> 1934: This was an outpatient preventive and curative study conducted from November to April. The study groups included twenty-two white and ten Negro infants without rickets and four white and two Negro infants with mild rickets. The infants varied in age from 1½ to 12 months, the average age at the start being about 6 months. No infant had had any antirachitic therapy except casual exposure to the sun during the preceding summer. During the experiment each infant, regardless of the total milk intake, received 135 units of vitamin D as cod liver oil concentrate (Vitex) in milk. Biweekly weights and roentgenograms were the criteria. A group of twenty-five infants, twelve white and thirteen Negroes, served as controls; these had had no antirachitic therapy through the winter and had a roentgenologic examination in April. The average age of the controls in April was 6.2 months. Fourteen (56 per cent) of the control group were rachitic as determined by the x-rays. Of the experimental groups the thirty-two normal infants were completely protected; the weight gains were satisfactory. The six infants who showed slight signs of rickets at the beginning of the experiment showed progressive improvement. In no case did the patient grow worse during the study. Healing occurred in from eight to sixteen weeks. On the basis of these observations it may be concluded that cod liver oil concentrate milk will prevent and cure rickets when the amounts of milk are adequate and the vitamin D intake is maintained at a constant level of 135 units daily. The slow healing of rickets suggests that this level approaches the minimal effective amount.

Wyman, Eley, Bunker and Harris,<sup>43</sup> 1935: This was an inpatient, curative study conducted from January to March, comparing irradiated milk and milk from cows fed irradiated yeast. The irradiated milk averaged barely 135 units and the "yeast milk" varied from 160 to 175 units to the quart. Roentgenograms and determinations of serum calcium and phosphorus were made at weekly intervals. The six infants observed were kept without vitamin D for a preliminary period to preclude spontaneous healing. Three infants, 6, 7 and 26 months of age, were given irradiated milk and three infants, 8, 9 and 22 months of age, were given "yeast milk," both milks in daily amounts of from 26 to 32 ounces. Each infant showed some healing within four weeks; they were not studied to complete healing. From examination of the roentgenograms and the rate of increase of the calcium × phosphorus product the authors conclude that the two milks are equivalent, unit for unit.

In this experiment the "yeast milk" contained from 20 to 30 per cent more vitamin D to the quart than did the irradiated milk, and the babies of the "yeast milk" group received approximately 20 per cent more vitamin D than did the babies of the irradiated milk group. Despite this disparity in the amounts of vitamin D the blood phosphorus curves, when plotted against time, showed a much steeper rise for the irradiated milk

group. The comparison obviously indicates a superiority for irradiated milk. The superiority is something more than 20 per cent.

Gerstenberger, Horesh, Van Horn, Krauss and Bethke,<sup>44</sup> 1935: This was an inpatient, curative study of irradiated milk and milk from cows fed irradiated yeast. The criteria used were roentgenograms, the time required for complete healing, and the serum calcium, inorganic phosphorus and phosphatase. It was originally intended to have the two milks at the same unitage level of vitamin D; viz., 148 units to the quart. The preliminary assays indicated an equal unitage, but later check assays showed a content of 216 units to the quart for the irradiated milk and 148 units for the "yeast milk," a ratio of approximately 1.5:1. In the clinical trial thirteen rachitic infants (twelve Negro, one white) were kept for from two to four weeks without antirachitic treatment to preclude spontaneous healing. Irradiated and "yeast" milks were then fed at levels of 720 and 480 cc., the total milk intake being kept approximately the same by the addition of skimmed milk to the diet. Both levels of feeding produced healing of rickets, the lower level much more slowly than the higher. From a comparison, in infants of the same age and severity of rickets, of the times required for healing as judged by roentgenograms and the production of normal blood values, the authors estimate that the irradiated milk was one and one-half times as potent as the "yeast milk." This ratio is the same as that found by assay of the milks. The authors conclude that the two types of milk seem of equal efficacy, unit for unit, for healing rickets in infants. They express the opinion that, if some difference does exist, it is the irradiated milk that is slightly superior. The belief is stated that 75 units of vitamin D daily is very close to the minimal amount required for ultimate healing of active rickets. In this experiment, vitamin D in the amount of 110 units daily was sufficient to heal rickets in from nine to twelve weeks and to produce normal serum calcium and phosphorus values in from seven to nine weeks.

This study is a good example of a well controlled curative experiment. The authors present a critical discussion of criteria for this type of study and offer an explanation of the lack of agreement between the results presented and some of those previously published by others. Some data are given as the basis of a discussion of the minimum preventive and curative dose of cod liver oil. In comparing irradiated milk to cod liver oil, the authors state that their data would probably establish the ratio at 1:1.

The data presented in this publication permit interpretations in addition to those presented. When the time for bone healing is used as the criterion, no difference is established between the 108 unit irradiated milk and the 108 unit "yeast milk" groups or between the 108 unit irradiated milk and the 162 unit irradiated milk groups. When the time required to establish normal blood values is used as the criterion, definite differences are observed. Irradiated milk supplying 108 units seems superior to "yeast milk" supplying 103 units, and the irradiated milk supplying 162 units seems superior to irradiated milk supplying 108 units. When the time required to establish normal blood calcium and phosphorus values is used as the criterion, the ratio of effectiveness of irradiated milk as compared to "yeast milk" is 1:1.3; when phosphatase values are used the ratio is 1:1.4. From the point of view here presented,

42. Barnes, D. J.: Rickets. *Am. J. Dis. Child.* 48:1258 (Dec.) 1934.  
43. Wyman, E. T.; Eley, R. C.; Bunker, J. W. M., and Harris, R. S.: *New England J. Med.* 212:257 (Feb. 7) 1935.

44. Gerstenberger, H. J.; Horesh, A. J.; Van Horn, A. L.; Krauss, W. E., and Bethke, R. M.: *Antirachitic Cow's Milk*. *J. A. M. A.* 104:816 (March 9) 1935.

the author's opinion as to the possible superiority of irradiated milk seems confirmed.

Lewis,<sup>45</sup> 1935: Observations are reported which compare irradiated ergosterol in corn oil with irradiated ergosterol in milk. The preparation used was "crystalline vitamin D (calciferol)." This was an outpatient curative study. The study group included thirty-six infants, divided into four groups. Nine infants received 243 units of this vitamin D in oil, ten received 2,430 units in oil, nine received 243 units in milk and eight received 121 units in milk. Each baby received 24 ounces of milk daily. The criterion was the amount of healing at four, six and eight weeks as shown by roentgenograms. The author concluded that better results were obtained with 121 units in milk than with 243 units in oil and that 243 units in milk gave better results than 2,430 units in oil. He believes that the results obtained offer an explanation for the greater effectiveness of antirachitic milks as compared with viosterol in oil. Irradiated ergosterol in the amount of 121 units in milk was below the minimum curative level, as was also 243 units in oil. However, 243 units in milk was an adequate curative dose; this amount approximates three times the amount the author believes effective when administered as irradiated milk.

Tisdall, Drake and Brown,<sup>46</sup> 1935: Two infants with acute rickets were treated with irradiated cholesterol in corn oil. This substance in the amount of 750 units daily produced rapid healing. Good deposition of new bone was observed in two weeks and complete cure by seven weeks.

Rapoport, Stokes and Whipple,<sup>47</sup> 1935: This was an inpatient preventive and curative study of irradiated evaporated milk containing 125 units of vitamin D to the 14½ ounce can. The study group consisted of twenty-three infants under 5 months of age at the beginning of the experiment. The study was conducted from January 2 to May 15. Five infants had mild rickets at the beginning of the study. All the infants were fed nonirradiated evaporated milk for about one month. They were then divided into two groups according to the presence or absence of rickets by roentgenographic examination. The preventive group comprised nine infants and the curative group thirteen. One infant is considered separately because he failed to develop rickets after twelve weeks of feeding with nonirradiated milk that contained 30 units of vitamin D to the 14½ ounce can.

The nine infants of the preventive group received amounts of milk which permitted the ingestion of from 88 to 127 units of vitamin D daily. One developed mild rickets after eight weeks of irradiated milk feeding; the rickets healed in another four weeks. One infant developed moderate rickets, which later began to heal under the same regimen. The latter infant was one of twins and weighed 6 pounds 13 ounces (3,091 Gm.) at 5 weeks of age when the experiment started. He was then given nonirradiated milk for eight weeks without the development of rickets. With the irradiated milk he received 92 units of vitamin D daily. For the entire group the duration of irradiated milk feeding varied from four and one-half to thirteen weeks.

Of the thirteen infants in the curative experiment, two had complete healing, three slight healing, two an

advance of the rachitic process followed by slight healing, four no healing and two an advance of the process without healing.

The authors conclude that irradiated evaporated milk containing 125 units of vitamin D to the 14½ ounce can appeared to be adequate for the prevention of rickets in infants. They conclude also that the same milk appears to be unreliable for the cure of rickets in infants.

The results with two of the babies in the preventive group raise a question as to the adequacy of the protection provided by the product used. At least it is indicated that the amount of vitamin D given approaches the lowest level of a preventive dose. The curative results are in distinct contrast to those of other studies of this review. The fact that rickets increased in severity in 30 per cent of the infants of the curative study indicates a low preventive effectiveness.

Jeans and Stearns,<sup>48</sup> 1935: This was an inpatient, winter, metabolic study. The study group consisted of five white infants. When the experiment was started, one infant was 11 weeks, one was 6 weeks and the remaining three were from 10 to 20 days old. They were given evaporated milk containing cod liver oil concentrate (Vitex) with 400 units to the reconstituted quart. The daily intake of vitamin D varied from 245 to 400 units. The rate of growth of each infant both in weight and in length was above the Kornfeld averages and equal to the rate of growth of infants kept under similar conditions but given 340 units of vitamin D as cod liver oil. The infants were precocious in dentition and muscular achievement. The roentgenograms showed no rickets. The per kilogram retentions of calcium for thirty-four metabolism periods were reported. The retention for each intake was within the range and averaged approximately the same as the retention of a larger group of infants (200 periods of study) given 340 units of vitamin D daily as cod liver oil, and about 10 mg. per kilogram higher than the retentions observed in a similar group of infants given 135 unit milk. From this study it was concluded that evaporated milk containing cod liver oil concentrate sufficient to allow 400 units of vitamin D to the reconstituted quart prevents the development of rickets and permits high retentions of calcium and excellent growth and development of infants.

Strong, Naef and Harper,<sup>49</sup> 1935: This was an outpatient, preventive study carried on in New Orleans from December 1933 to November 1934. The study group consisted of twenty-two infants who were fed irradiated evaporated milk in such quantities that from 70 to 160 units of vitamin D was ingested daily, the amount being proportionate to the age of the infant. The infants were mostly in the first six months of life. The results were determined by roentgenograms, a single examination being made for each baby after a period of observation of from four to seven months. Roentgenograms were not made of two of the twenty-two infants. Of the remaining twenty infants the roentgenograms were made as follows: one in April, three in May, twelve in June, one in July, two in August and one in October. One baby examined in August was reexamined in November. Slight evidence of rickets was present in two infants, one examined in April and one in June. A control group given from 10 to 15 drops of viosterol daily (from 865 to 1,300 units) had no evidence of rickets. The authors con-

45. Lewis, J. M.: *J. Pediat.* 6: 362 (March) 1935.

46. Tisdall, F. F.; Drake, T. G. H., and Brown, A. G.: *Canad. M. A. J.* 32: 490 (May) 1935.

47. Rapoport, Milton; Stokes, J., Jr., and Whipple, Dorothy V.: *J. Pediat.* 6: 799 (June) 1935.

48. Jeans, P. C., and Stearns, Genevieve: *Proc. Soc. Exper. Biol. & Med.* 32: 1464 (June) 1935.

49. Strong, R. A.; Naef, E. F., and Harper, I. M.: *J. Pediat.* 7: 21 (July) 1935.

clude that irradiated evaporated milk should be supplemented with additional vitamin D. Presumably they held the slight amount of rickets found as of significance. A preventive study in the summer can be of no significance if rickets is not found. The finding of definite rickets would be important. The question arises as to how definite the rickets was in these two cases.

Compere, Porter and Roberts,<sup>50</sup> 1935: This was an inpatient curative study of irradiated yeast in comparison with cod liver oil. It was conducted from January 1 to April 1. The study group consisted of twenty-one infants from 5 months to 2½ years of age. The infants were divided into five groups. Group 1 served as the control and group 2 received 2,061 units of vitamin D as cod liver oil. The remaining groups received irradiated yeast in amounts which supplied 2,252, 6,755 and 13,511 units of vitamin D. Roentgenograms were taken and determinations of calcium and phosphorus in the serum were made. The authors conclude that from 1.1 to 3.3 times as much of the vitamin D of irradiated yeast as of the vitamin D of cod liver oil is needed to produce the same curative results as determined by roentgenograms.

The reviewer is unable to evaluate this study on any basis employed in this review. More than half of the babies apparently had rickets of the mild and doubtful variety, which has been excluded from consideration in this review. Even by the exacting criteria employed, one baby had "little evidence of rickets." Further difficulties in evaluation are encountered in that the dosages employed are far above what are generally considered to be minimum effective levels.

Peterman and Epstein,<sup>51</sup> 1935: This was an orphanage study of evaporated milk containing 400 units of vitamin D as cod liver oil concentrate (Barthen) to the 14½ ounce can (13 fluidounces). The observations began in January 1934 and continued to February 1935. As infants were discharged from the study group, replacements were made. The babies ranged in age from 2½ to 18 months at the beginning of the study. The criteria were roentgenograms and calcium and phosphorus values of the serum. The lowest average daily intake of vitamin D for any baby for any tabulated period was 308 units and the highest was 620 units. The authors found that no infant had any clinical, chemical or roentgenographic sign of rickets during the period of the study, and they concluded that the milk was amply protective.

From the tabulated data it may be calculated that the twelve babies with which the experiment started in January had at the beginning an average of 9.10 mg. of calcium and 6.08 mg. of phosphorus per hundred cubic centimeters of serum. In April, approximately three months after the experiment started, the average values for the same babies were calcium 10.12 mg. and phosphorus 3.54 mg. per hundred cubic centimeters. In February 1935 the average values for all the babies remaining in the group (ten infants) were calcium 10.35 mg. and phosphorus 4.74 mg. per hundred cubic centimeters. Such results can scarcely be considered satisfactory. The April values are such as might be expected with little or no vitamin D and are distinctly at variance with those of other studies of this review in which an equivalent or smaller quantity of vitamin D was used as cod liver oil or cod liver oil concentrate.

Drake, Tisdall and Brown,<sup>52</sup> 1936: This was an outpatient winter study of 103 infants from 1 to 6 months of age who received irradiated evaporated milk. The milk contained 9.8 units of vitamin D to the ounce. The amount of milk received by the babies varied from 6 to 20 ounces. Few babies received more than 16 ounces. Moderate or marked rickets was not observed; 17 per cent developed mild rickets. Of fifty-two babies receiving evaporated milk without vitamin D, 10 per cent developed moderate or marked rickets and 29 per cent developed mild rickets. Of fifty-two babies receiving pasteurized fresh milk without vitamin D, 23 per cent developed moderate or marked rickets and 25 per cent developed mild rickets. Concerning the slight and mild rickets, the authors state: "In the interpretation of the x-ray from the clinical standpoint it must be kept in mind that the 'extremely slight rickets' are so slight that most physicians would classify these x-ray plates as normal. Those grouped as 'mild rickets' also do not show changes which would cause any great concern from the clinical standpoint." For the purpose of this review the cases of mild rickets are excluded from consideration. The authors state that the babies gained weight faster than the usual rate. Growth data are not given.

Rapaport and Stokes,<sup>53</sup> 1936: This was an inpatient winter study of ten infants receiving irradiated evaporated milk and of nine infants receiving irradiated fresh milk. For eighteen of the infants the experiment was preventive and for one curative. At the beginning of the experiment the infants were from 2 weeks to 5½ months of age, with an average age of 2 months. The evaporated milk contained 125 units of vitamin D to the 14½ ounce can and the fresh milk 140 units to the quart. For both groups of infants the vitamin D intake varied from 100 to 145 units daily. The observations were made over a period of four and one-half months. No infant developed rickets. The one infant who had mild rickets at the beginning of the study had slow healing; healing was first noted at thirteen weeks and was complete at eighteen weeks. The authors call attention to the lack of agreement between the clinical and the x-ray signs of rickets. It is stated that excellent growth and development of the infants were observed.

The results of this experiment indicate that irradiated fresh milk and irradiated evaporated milk are of equal value. The slow healing of rickets indicates a close approach to a minimum effective level of vitamin D. As nearly as can be determined from the data given, the rates of growth correspond closely to Kornfeld's averages with the exception of two babies who made greater growth progress.

Lewis,<sup>54</sup> 1936: This report concerns the effect of crystalline vitamin D administered in milk, in oil and in propylene glycol, in an outpatient preventive study conducted from December to the end of April. The 255 infants were distributed into eight groups. Between 50 and 60 per cent of the babies of each group were Negroes. Nearly 50 per cent of the babies were either partially or wholly breast fed, but none of these were included in the groups receiving the vitamin D in milk.

Rickets developed in three of fifty-eight babies (5.1 per cent) receiving 145 units of vitamin D in 28 ounces of milk, in six of forty-one infants (14.6 per cent) receiving 145 units of vitamin D in oil, and in six of forty-four infants (13.6 per cent) receiving the same

50. Compere, E. L.; Porter, Thelma E., and Roberts, Lydia J.: A Clinical Comparison of the Antirachitic Value of Irradiated Yeast and of Cod Liver Oil. *Am. J. Dis. Child.* 50: 55 (July) 1935.

51. Peterman, M. G., and Epstein, Ely: Prevention of Rickets with a Cod Liver Oil Concentrate in Milk. *Am. J. Dis. Child.* 50: 1152 (Nov.) 1935.

52. Drake, T. G. H.; Tisdall, F. F., and Brown, A. G.: *J. Pediat.* 8: 161 (Feb.) 1936.

53. Rapaport, Milton, and Stokes, J., Jr.: *J. Pediat.* 8: 154 (Feb.) 1936.

54. Lewis, J. M.: *J. Pediat.* 8: 308 (March) 1936.

amount of vitamin D in propylene glycol. At the level of 290 units of vitamin D daily, rickets developed in one of fifty-one infants (1.9 per cent), in five of fifty-two infants (9.6 per cent) and in five of forty-five infants (11.1 per cent) who received the vitamin D respectively in milk, in oil and in propylene glycol. Of forty-two babies who received 1,450 units in oil, one (2.4 per cent) developed rickets. Of a control group of twenty-two babies receiving no vitamin D, eight (36.3 per cent) developed rickets. In a baby with rickets 290 units of crystalline vitamin D in 28 ounces of milk was effective, whereas previously in the same infant 290 units in a teaspoonful of milk produced no healing.

The author concluded that "crystalline vitamin D" is much more effective when dispersed in milk than when administered in a more concentrated state in oil or propylene glycol. He considers also that 1,450 units in oil is a satisfactory protective dose. Interpretation of this study is not aided by the fact that in a preventive experiment rickets developed at all levels of vitamin D administration and that an intake of vitamin D which permits rickets is considered satisfactory.

#### SUMMARY OF CLINICAL STUDIES

*Cod Liver Oil.*—DeSanctis and Craig found that cod liver oil at an estimated level of from 380 to 460 units prevented physical signs of rickets in 97 per cent of the babies studied. Barnes, Brady and James observed cure or prevention of rickets in all but two of sixty-four babies receiving 840 units of vitamin D as cod liver oil in an outpatient study; the mother of one of the rachitic infants was noncooperative. Also, in an outpatient study Drake, Tisdall and Brown obtained complete protection against moderate rickets with one teaspoonful of cod liver oil (350 units) daily, though complete protection was not attained with two and three times this amount. Julius Hess observed no rickets when one teaspoonful of cod liver oil (350 units) was fed daily. Jeans and Stearns<sup>22</sup> and Nelson<sup>23</sup> observed ample retentions of calcium and phosphorus and no rickets when one teaspoonful of cod liver oil was given. Jeans and Stearns found poorer retentions of calcium and phosphorus, though no rickets, with from 60 to 135 units of vitamin D as cod liver oil. The evidence presented can be interpreted to indicate that one standard teaspoonful of cod liver oil (350 units) is ample and that 135 units or less may prevent rickets, but it permits retentions of calcium and phosphorus definitely lower than the retentions obtained with a larger intake of vitamin D.

*Irradiated Ergosterol.*—The lowest level of irradiated ergosterol found successful in preventing rickets is 270 units, as reported by Drake, Tisdall and Brown, and 286 units as reported by Julius Hess. This is in contrast to the failure of Barnes to prevent rickets with 750 units and the failure of Alfred Hess to prevent rickets with 5,700 units: however, in the same experiment Hess observed rickets prevention with 2,860 units. Later, Alfred Hess obtained healing with 865 units. Lewis found 243 units as crystalline vitamin D in oil below the minimum curative level and later found 290 units in either propylene glycol or in oil to be below the minimum protective level. The data cited are too conflicting to allow satisfactory conclusions. If 270 units (Drake, Tisdall and Brown) daily is an adequate preventive dose, it may be considered that the minimum preventive dose has not yet been determined.

*Cod Liver Oil Concentrate in Milk.*—Using milk containing vitamin D as cod liver oil concentrate in the

amount of 400 units to the quart, Barnes found that from 300 to 400 units brought about prompt recovery from rickets. Later he found that 135 units daily in milk gave complete protection against rickets and produced slow but complete healing of rickets. Wilson obtained protection against moderate rickets with 400 unit milk in all full term infants studied except one not under good control. The experiments cited are with fresh milk. It may be concluded that fresh milk containing 400 units of cod liver oil concentrate to the quart when fed in customary amounts to full term infants will prevent rickets.

Evaporated milk with cod liver oil concentrate has produced results similar to those observed with fresh milk, with the exception of Peterman and Epstein's study. Jeans and Stearns observed not only prevention of rickets but high retentions of calcium and phosphorus when evaporated milk was fed with 400 units to the reconstituted quart. The retentions were of the same order as those observed when one teaspoonful of cod liver oil was given and considerably better than the retentions obtained with 135 unit milk. The retentions with 135 unit milk were believed to be suboptimal.

The results with fresh milk and with evaporated milk are sufficiently similar to permit their consideration as of one group. Though 135 unit milk prevents rickets, it may permit a suboptimal intake of vitamin D as judged by calcium retention. Milk containing 400 units to the quart seems entirely adequate.

*Irradiated Milk.*—Four preventive studies of irradiated fresh milk have been reported. In all four reports good results are claimed, but failure in complete prevention is recorded for two of the four studies.

The results with irradiated evaporated milk agree with those of irradiated fresh milk. In the study of Rapoport, Stokes and Whipple, rickets appeared in one or two of the nine subjects observed, and in the curative study rickets increased in severity in several cases. In the 1936 report of Rapoport and Stokes, better results are recorded. Drake, Tisdall and Brown report the prevention of moderate rickets. Two of twenty-two infants of Strong's study developed rickets. Jeans and Stearns report what are considered to be suboptimal retention of calcium with irradiated evaporated milk.

No reason has become evident for considering that irradiated fresh milk and irradiated evaporated milk have different antirachitic values. In the recent study of Rapoport and Stokes the two varieties were compared under the same conditions and appeared to be of similar value. In curative experiments with irradiated milk additional evidence is offered that vitamin D is present in amounts very close to the minimum effective level. The time required for healing is long and in some instances no healing occurred.

It may be concluded that irradiated milk will prevent rickets in most full term babies but that the amount of vitamin D present approaches closely the minimum preventive level and permits what is believed to be suboptimal retention of calcium.

*"Yeast Milk."*—Only one preventive study with "yeast milk" has been found (Hess, 1931). In this study rickets developed at a level of 160 units daily and was prevented at a level of 320 units. In this study two of the three babies observed on a curative basis had an increase in their rickets at the 160 unit level. In contrast to this curative observation, Kramer obtained healing at a level of 150 units and Gerstenberger at a level of 74 units. Wyman's studies show excellent antirachitic values for "yeast milk" with 430 units to the quart when a quart or more of milk is ingested.



*Irradiated Ergosterol Milk.*—Using milk from cows fed irradiated ergosterol preparations, Hess observed prevention of rickets with 160 and with 320 units daily. Gerstenberger observed slow and uncertain curative results with milk containing approximately 135 units to the quart. When crystalline vitamin D was added directly to milk, Lewis found 121 units daily to be below the minimum curative level and 243 units an adequate curative dose; later he found 290 units in milk to be a more or less adequate protective level. If 121 units daily is below the minimum curative level, an inferiority to irradiated milk and cod liver oil concentrate milk is indicated.

*Animal Source Group.*—Only three reports have been found in which two sources of vitamin D of animal origin are compared by use concomitantly in the same experiment. One of these (Daniels) may be disregarded because of unknown potency of the materials used. The study of Drake, Tisdall and Brown offers no basis for comparison. Cod liver oil at the lowest level fed, viz., one teaspoonful, protected against rickets. Irradiated milk fed at levels permitting 95 or more units daily gave protection. Jeans and Stearns compared cod liver oil, cod liver oil concentrate milk and irradiated milk with the conclusion that these are of equal value, unit for unit when the criterion is calcium retention.

Indirect comparisons also indicate equal values. Barnes prevented rickets with 135 units as cod liver oil concentrate in milk, and in several studies rickets was almost completely prevented with 135 unit irradiated milk.

Such evidence as is available may be interpreted to show that cod liver oil, cod liver oil concentrate milk and irradiated milk are of equal potency for the human being, unit for unit.

*Vegetable Source Group.*—Hess is the only one who has compared two sources of vitamin D of vegetable origin in the same experiment. He found 160 units as irradiated ergosterol milk to be protective whereas 160 units as "yeast milk" was not. He also found irradiated ergosterol in oil inferior to "yeast milk," the requirement for viosterol being ten times that for "yeast milk." Lewis reported the requirement of crystalline vitamin D in oil to be ten times that of crystalline vitamin D added to milk; the data of a later experiment indicate that the requirement for the crystalline vitamin D in oil is less than five times that for the crystalline vitamin D in milk; the minimum protective dose was not determined.

The comparisons cited between viosterol in oil and the vitamin D milks do not receive full support from studies of viosterol made by others. For example, the protection against rickets obtained by Drake, Tisdall and Brown with 270 units and by Julius Hess with 286 units as viosterol in oil is in striking contrast to the results reported by Alfred Hess and Lewis.

On the basis of Alfred Hess's report, an advantage might be interpreted in favor of irradiated ergosterol milk over "yeast milk." However, Kramer obtained curative results with 150 units as "yeast milk." The evidence available does not indicate any essential difference in relative human value between yeast milk and irradiated ergosterol milk.

*Animal versus Vegetable Sources.*—The reports of Barnes and DeSanctis indicate a superiority of cod liver oil over viosterol. The reports of Alfred Hess, of Kramer and of Gerstenberger and his associates may be interpreted to indicate that irradiated milk is from

1.3 to 2 times the value of "yeast milk." The report of Wyman indicates that irradiated milk is more than 20 per cent superior to "yeast milk" on a unit for unit basis.

On the basis that, unit for unit, yeast milk and irradiated ergosterol milk are of the same value, that irradiated milk and cod liver oil concentrate milk are of the same value, and that irradiated milk is superior to yeast milk, a group relationship has been established. Even granting these premises, the exact relationship between the two groups is not accurately determined. Whatever the difference, it seems to be small. On the basis of the evidence reviewed and its evaluation, the difference probably is not more than 1.5:1. This ratio of effectiveness is based entirely on curative experiments. Because of the possible inherent weaknesses already discussed for curative studies, corroboration by preventive experiments seems highly desirable.

*Dispersion of Vitamin D in Milk.*—The report of Lewis that crystalline vitamin D is of greater value in milk than in oil raises a new question for consideration. If the enhanced value is due to dispersion and consequent increased availability for utilization, all the vitamin D milks have this factor in common. Observations recorded in this review indicate that cod liver oil and cod liver oil concentrate in milk are of equal value. In Lewis's experiment 243 units of vitamin D in milk was amply effective in a curative experiment, while the same amount in oil was quite ineffective. In a later report 290 units in milk was relatively effective in a preventive experiment, whereas the same amount in propylene glycol or in oil seemed less effective. These observations may be contrasted with the observation of Drake, Tisdall and Brown that 270 units in oil seemed amply protective. As regards animal experiments, Haman and Steenbock<sup>7</sup> were unable to observe any difference in the chicken between irradiated ergosterol in oil and irradiated ergosterol in milk.

#### SUMMARY

Exclusive of purely laboratory products there may be only two varieties of vitamin D, one of animal origin and one of vegetable origin. All animal sources may have a vitamin D of the same value. The same is true for all vegetable sources. Vitamin D of animal source appears to be more potent for the human being than the vitamin D of vegetable source. The degree of superiority is not entirely established, but on the basis of evidence available it may be in the ratio of 1.5:1 when vitamin D milks are compared.

Animal source vitamin D milk with 135 rat units (U. S. P.) to the quart will prevent rickets, but this amount of vitamin D approaches closely the minimum effective level.

Prevention of rickets is not a criterion of adequacy of vitamin D intake. The amount of vitamin D that barely prevents rickets does not permit the best growth of infants, nor does it permit retentions of calcium and phosphorus as great as those considered desirable.

Animal source vitamin D in the amount present in one standard teaspoonful of average high grade cod liver oil or in milk containing 400 units to the quart is adequate for the infant from the standpoint of calcium retentions and growth. The minimal amount that is adequate is not known.

Vegetable source vitamin D has not been used in a manner which would determine directly the minimum rickets-preventive dose or the amount that permits good growth and retentions.

Children's Hospital.

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 20, 1936

## REDUCING THE MORTALITY OF ACUTE APPENDICITIS

Vital statistics of the United States place the mortality rate for acute appendicitis at 9 for each hundred thousand of population for the year 1920 and at 15 per hundred thousand for the year 1932. The Metropolitan Life Insurance statistics indicate that the mortality rate of acute appendicitis rose from 10.6 per hundred thousand for the period from 1911 to 1914 inclusive to 14.1 for the period from 1927 to 1930 inclusive. Recent reports from various clinics, however, show a definite lowering in the operative mortality of acute appendicitis. The contradiction is explainable on the assumption of a higher incidence of the disease and a greater number of recognized and reported cases.

The factors contributing to the mortality of acute appendicitis include the age and sex of the patient, administration of cathartics before the operation, and delayed operation, as well as the skill and the judgment of the surgeon. Age is the most important single factor. The high mortality in the young is due to the greater virulence of the infection, to a tendency to early perforation, and to a faster spread of the pathologic alterations. Diagnostic difficulties resulting in delayed operation, and the more frequent recourse to cathartics combine to give a mortality rate of 20 per cent in children under the age of 3 years. The high mortality rate past middle life is due principally to diagnostic errors caused by the frequency of atypical forms, owing to a less vigorous reaction on the part of the organism. According to Wood,<sup>1</sup> atypical clinical manifestations in a group of patients past middle life were seen in 50 per cent, a correct preoperative diagnosis was made in only 62 per cent and the mortality rate was 28 per cent. Both the incidence and the mortality rate of acute appendicitis are lower for women than for men, probably because of greater resistance of the pelvic peritoneum in the former.

There is a general agreement supported by statistical studies<sup>2</sup> that the administration of cathartics seriously affects the situation.

The merits of the early operation are too well established to require reiteration. The technic of operation is simple and the mortality rate when operation is performed during the first twenty-four hours varies from a fraction of 1 per cent to 0. Recently it was suggested that the inversion of the stump of the amputated appendix is not necessary. Omission of this step will further simplify the operation of appendectomy. Appreciation of the fact that one must not expect to find all the five cardinal symptoms (pain, localized tenderness, muscle spasm, rise in temperature and leukocytosis) in every case and adherence to the principle of early operation will undoubtedly reduce this mortality still further.

As soon as perforation has taken place, the problem of care in appendicitis becomes tremendously complicated as to both the estimation of the existing pathologic changes and the question of operative intervention. According to Aschoff,<sup>3</sup> pathologic complications are present, on an average, thirty-five hours after the onset of the attack. The mortality in this group rapidly rises, to reach in cases complicated by diffuse peritonitis the appalling figures ranging with various authors from 15 to 60 per cent. The cases in which perforation has taken place may be divided into four groups: (1) walled off perforation, (2) encapsulated abscess, (3) acute limited peritonitis and (4) acute spreading more or less diffuse peritonitis. The greatest divergence of opinion exists with regard to the treatment of the late cases complicated by a spreading peritonitis. In contradistinction to the surgeon who advocates the removal of the focus of infection as the most important step in the treatment of every form of perforative peritonitis, except of course when the patient is moribund, there are those who believe that with the progression of the disease the good to be derived from the operation diminishes and the damage inflicted rises. The adherents of this opinion believe that surgical intervention in cases past forty-eight hours is without value. They insist that the infection is more likely to become delimited on the Ochsner plan of management and that intervention at this stage is bound to interfere with the plastic defensive and immunobiologic properties of the peritoneum. They propose that patients admitted to the hospital "too late for the early operation and too early for the late operation" be treated conservatively, preferably with the Ochsner management.

The objections raised against the dictum of no operation after the forty-eight hours are that (1) the history frequently cannot be relied on to establish the

2. Bower, J. O.: Acute Appendicitis, J. A. M. A. **96**:1461 (May 2) 1931. Leonard, E. D., and Derow, Sidney: Mortality Factors in Acute Appendicitis, New England J. Med. **214**:52 (Jan. 9) 1936.  
3. Aschoff, Ludwig: Pathologie und Klinik in Einzeldarstellungen, Berlin, Julius Springer, 1930.

1. Wood, C. B.: Am. J. Surg. **26**:321 (Nov.) 1934.

number of hours, (2) the dictum forty-eight hours does not embrace all the factors comprising the picture, such as the extent of pathologic alterations, the virulence of the bacteria, the extent of intestinal paresis and the constitution of the patient, and (3) the adoption by the general practitioner of the dictum no operation after forty-eight hours is bound to do much harm. In favor of intervention it is argued that the continued discharge of infectious material and pathogenic organisms from the ruptured appendix and the intestine is bound to wear down the defensive power of the peritoneum and that therefore the removal of the focus of infection constitutes the most important step in the treatment of perforative peritonitis. Statistics are extant to prove the superiority of either method. Le Grand Guerry<sup>4</sup> reports a mortality rate of 1.4 per cent in a group of 135 cases of gangrenous ruptured appendicitis with diffuse peritonitis treated by the Ochsner method. On the other hand, Guy W. Horsley<sup>5</sup> reports a group of 502 consecutive cases of acute appendicitis in which an immediate operation was performed, with a mortality rate of 0.8 per cent. There can be no doubt that skill and judgment of the surgeon play an important part in the mortality rate of any operative procedure. The operative intervention in these complicated cases constitutes a major procedure. It is suggested that the high mortality rate of this group could be materially reduced if the chief surgeon, rather than the senior intern or the resident, would assume the responsibility for its management.

The controversy as to what to do with the patient who has a palpable swelling is less acute. Such a patient is admittedly not an emergency problem. The inflammatory swelling, in fact, represents a definite limitation of the pathologic condition. It is capable of a complete resolution without forming an abscess. An increase in the size of the swelling, pain, chills, rise in temperature and in leukocytes, and at times fluctuation establish the existence of an abscess. Watchful expectancy and intervention only when the abscess is not being absorbed is advocated by some. The more radical view is to operate regardless of the presence of a palpable swelling or the fact that it is regressing, the emphasis being placed on the removal of the appendix. An intermediate position is occupied by those who would operate in the presence of an inflammatory swelling or an early abscess, but who would wait for encapsulation in the case of a late abscess. They would further limit the procedure to an incision and drainage of the abscess without any attempt at the removal of the appendix. The objection to the policy of waiting is the possibility of a sudden rupture of the abscess leading to a most dangerous form of peritonitis.

The mortality rate of acute peritonitis complicating appendicitis has not been materially reduced by the

employment of various serums. The benefits of Havlicek's method of ultraviolet irradiation of the intestine in the course of operation for the purpose of releasing histamine-like substances capable of stimulating the portal circulation have not been confirmed by others.

Lowering of the mortality rate of acute appendicitis may follow education of the general practitioner to recognize the atypical forms, strict adherence to the principle of early operation, education of the public to abstain from the use of cathartics in the presence of abdominal pain, and responsibility for the neglected cases by the experienced surgeon rather than by the casual operator.

#### RELATION OF DIETARY CALCIUM AND PHOSPHORUS

The etiologic importance of improper diet in the production of rickets and the demands of the maternal organism for the formation of proper skeletal tissue of the young and for the subsequent lactation period have led to the accumulation of data demonstrating the significance of the ratio of calcium to phosphorus in the food. The normal ratio has been defined as from 2:1 to 1:2. Experimental studies of rickets in rats have demonstrated that diets with this relationship between the calcium and phosphorus will not permit rickets to develop and will cure the condition after it has been produced. The failure of normal deposition of calcium phosphate in the bone is usually attributed to the lack of normal concentration of either calcium or phosphorus (or both) in the blood serum and thus in the fluid bathing the bone. The rôle of calcium and phosphorus in determining reproductive success has been studied much less extensively, probably because the effects resulting from deficiencies of these elements appear only after several reproductive cycles.

The emphasis that has been placed on calcium and phosphorus ratios has in general resulted in a lack of consideration of the absolute amounts of either of these two elements in the diet. The low phosphorus type of rickets, which is believed to be most frequent clinically, is also the type most readily produced experimentally in rats under controlled conditions. Consequently, the distortion of the calcium to phosphorus ratio at the expense of the latter element has generally been employed in the experimental investigation of rickets. However, recent studies of both experimental rickets and the reproductive cycle have varied widely both in the ratios of calcium to phosphorus in the diet and in the absolute amounts of each of these two elements ingested. The interesting data obtained indicate a definite shift in emphasis from one of relative to one of absolute amounts of calcium and phosphorus ingested and serve to illustrate the inadequacy of dealing solely with ratios. Shohl and Wolbach<sup>1</sup> at the Harvard Med-

4. Guerry, Le Grand: A Study of the Mortality in Appendicitis, *Ann. Surg.* 84: 283 (Aug.) 1926.

5. Horsley, G. W.: Improved Treatment of Appendicitis, *Virginia M. Month.* 62: 598 (Jan.) 1936.

1. Shohl, A. T., and Wolbach, S. B.: *J. Nutrition* 11: 275 (March 10) 1936.

ical School have extended and supplemented earlier investigations of the effects on bone formation in rats of high-calcium low-phosphorus diets to include low-calcium high-phosphorus diets. These investigators have correlated serum values and bone ash determinations with both ratios and levels of intake of these two elements; histologic pathology is also included, together with x-ray examination. This most recent work thus systematically completes a survey of the various calcium to phosphorus ratios and levels attainable with natural foodstuffs. In an equally complete investigation, Cox and Imboden<sup>2</sup> have studied the behavior of experimental rats receiving constant amounts of dietary calcium and phosphorus throughout the entire span of their reproductive life, thus obtaining an index of reproductive success.

The results of the Harvard work clearly indicate the fallacious interpretations that may result from a consideration solely of the calcium and phosphorus ratios of the diet. It seems evident that the absolute amounts of calcium and phosphorus is as important a factor in the production of rickets in rats as is the distortion of the accepted optimal dietary ratio for these two elements. It has been possible to produce rickets in experimental animals ingesting a diet low in both calcium and phosphorus, despite the fact that the calcium to phosphorus ratio in this type of diet was formerly considered "normal." The term "normal ratio," therefore, has thus largely lost its significance, for rickets may be produced with any ratio of calcium to phosphorus. As the absolute amounts of these mineral elements are increased, for any given ratio, the diet changes from a rachitogenic to a nonrachitogenic one. This importance of both level and ratio of these mineral elements is emphasized also by the studies of Cox and Imboden on the success of mother rats in producing and rearing young. A calcium to phosphorus ratio of 1.0, at a calcium level of 0.49 per cent, was established as the optimal level and ratio for successful gestation and lactation in this species. When the calcium level is not exactly known, it seems evident that a calcium phosphorus ratio of 1.0 for the mothers will approximate the optimal, as the highest ash contents of the 21 day old young were obtained with this ratio. At excessive mineral levels of 2.45 per cent, poor performance was obtained irrespective of the ratio. Phosphate in excess appeared to be better tolerated than an excess of calcium.

Although it is not always rational to transpose data obtained with one species to the explanation of normal and pathologic phenomena in another, the correlation of some of the data obtained in these two investigations with data in the literature for human beings is highly suggestive. Rickets in rats seems to bear a closer relation to rickets in infants and dogs than was formerly supposed, in that rickets is produced with diets in which

the ratio has been considered "normal," provided the amounts of calcium and phosphorus are sufficiently low. The essentials for the production of rickets thus appear to be an inadequacy of vitamin D accompanied by a relative deficiency of calcium or phosphorus or an absolute deficiency of either or both. The reproduction studies suggest that a calcium to phosphorus ratio of less than 1.0, which has been recommended by Sherman<sup>3</sup> for normal adult maintenance and by Toverud<sup>4</sup> for gestation, may be related to the low calcium intake which, in balance studies, has been observed in human pregnancy. It remains for future investigations to determine why a ratio of less than 1.0 is preferable at low calcium levels, but the importance of the absolute as well as the relative amount of dietary calcium and phosphorus appears to be clearly established by these recent studies.

### Current Comment

#### THE INTERNATIONAL COLLEGE OF SURGEONS—WHY?

Into the welter of scientific, pseudoscientific, medical and similar organizations which now appeal for the physician's patronage comes the International College of Surgeons, promoted by none other than H. Lyons Hunt, who has already to his credit [sic] the Association of Medical Editors and Authors. The prospectus indicates that the purpose of the organization is to bring together in closer harmony the leaders of the various colleges of surgeons now in existence; yet there is not the slightest evidence that the colleges of surgeons in any country have indicated their willingness to be brought together by this new organization. Among other objectives, the new "College" proposes to elevate the standards of surgery to a point at which international reciprocity may be realized; it is quite safe to say that international reciprocity in surgery must be a figment of the imagination for many generations to come. Apparently there will be a publicity department to keep the public informed as to what surgery can accomplish, prizes offered for research, a museum established in Geneva, a journal published and a building erected in Geneva, where the foreign promoter, A. Jentzer, resides. There are also to be annual meetings in the individual countries as well as a meeting every two years in Geneva. Finally, there will be three classes of members, notably members, fellows and masters, who will be entitled to place after their names the appropriate alphabetic insignia. The fellows are to be selected by election, appointment or examination. Apparently the first comers are all being appointed, but by whom and under what authority the prospectus sayeth not. Notwithstanding the obviously inflational character of this prospectus and the complete lack of any well authenticated background for this proposed organization, a considerable number of American physi-

3. Sherman, H. C.: *Chemistry of Food and Nutrition*, ed. 4, New York, Macmillan Company, p. 512.

4. Toverud, K. U.: *Nutritional Condition of New-Born Infants*, *Am. J. Dis. Child.* 46:954 (Nov., part 1) 1933.

2. Cox, W. M., Jr., and Imboden, Miriam: *J. Nutrition* 11:147 (Feb.) 1936.

cians have felt themselves highly honored by the receipt of the invitation and are already taking steps to extend the appendix to their names by the additional letters which they will purchase through this international college. There exists already an international surgical organization of standing and repute. No doubt an invitation to membership in this organization would be a considerable honor and well worthy of consideration by any competent surgeon. An invitation to membership in the present promotion might be considered more of an insult to the intelligence of the recipient than a recognition of extraordinary qualifications. One need not cast aspersions on the intelligence of the promoters. As psychologists they seem to have a fine insight into the weakness and folly of the average man, who likes to adorn himself in regalia and to adorn his cognomen with assorted alphabetic conglomerations.

#### INCREASE IN DUTY ON SURGICAL INSTRUMENTS FROM GERMANY

Beginning on or about July 11, importers of surgical instruments from Germany must, in addition to paying the normal tariff rate on the surgical instruments they import, deposit with the collector of customs an amount equal to 56 per cent of the invoice value of such instruments. This is to be held to cover the payment of an additional duty that it is proposed to levy, pending the ascertainment by the Treasury Department of the exact amount of the increase. The present normal rate of duty on surgical instruments is 55 per cent ad valorem, except in the case of instruments in chief value of glass, on which the rate is 70 per cent ad valorem. Section 303 of the Tariff Act of 1930 provides that whenever an exporting country pays, directly or indirectly, any bounty or grant to the exporter of any article manufactured or produced in that country and that article is dutiable under the act, then, on the importation of that article into the United States, an additional or countervailing duty shall be levied equal to the net amount of the bounty or grant given by the country from which it was exported. Germany, according to data in the files of the Treasury Department, grants certain bounties to exporters of surgical instruments, provisionally estimated by the Treasury Department as 56 per cent of the invoice value of the exported articles. This bounty enables German exporters of surgical instruments to compete in the markets of the United States to the disadvantage of our own domestic manufacturers of such instruments. Because of the bounties thus granted, according to a Treasury Decision approved by the Secretary of the Treasury June 4, 1936, the additional or countervailing duty is to be levied.

**The Average Basal Metabolism.**—In health, this basal energy metabolism averages about 70 calories per hour per man of average size, or about one calory per kilogram of body weight per hour. This is the minimum rate of expenditure of the normal man or woman when awake. During sleep the energy output is somewhat less, but when sitting erect it is more, while standing involves a still further expenditure of energy. A normal man, therefore, however sedentary he may be, is almost sure to expend in the course of the twenty-four hour day somewhat more than twenty-four times his basal hourly number of calories.—Sherman, H. C.: Food and Health, New York, Macmillan Company, 1934.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

### CALIFORNIA

**Mussel Poisoning and Quarantine.**—All mussels from the ocean shore of California from the southern boundary of Ventura County north to the California-Oregon boundary, with the exception of San Francisco Bay, have been placed under quarantine for the period May 19 to September 30, according to the state department of health. This quarantine, established annually, was imposed earlier this year because of two fatal cases of mussel poisoning of residents of Los Angeles who gathered mussels and ate them in Ventura County. Never before have poisonous mussels been discovered so far south in California. Heretofore the quarantine area has extended from Monterey County to the Oregon state line. Since this order was issued it has become necessary to include the coastal area of Los Angeles County and investigations are being made as far south as the Mexican border in order to determine whether poisonous shellfish may be recovered in southern waters of California.

**Changes in Medical Faculty.**—Dr. LeRoy C. Abbott, clinical professor of orthopedic surgery, University of California Medical School, San Francisco, has been appointed professor of orthopedic surgery, effective July 1. Other changes in the faculty effective at that time include:

Dr. Theodore L. Althausen, to associate professor of medicine.  
Dr. Evelyn M. Anderson, assistant professor of medicine.  
Dr. Aberhardt C. Bost, assistant clinical professor of pediatrics.  
Dr. Frederic C. Bost, assistant clinical professor of orthopedic surgery.  
Dr. Mary E. Botsford, clinical professor of anesthesia, emeritus.  
Dr. Howard A. Brown, assistant clinical professor of surgery.  
Dr. Frederick S. Bruckman, assistant clinical professor of medicine.  
Dr. Jesse L. Carr, assistant professor of pathology.  
Dr. Joseph W. Crawford, assistant clinical professor of ophthalmology.  
Dr. William C. Deamer, assistant professor of pediatrics.  
Dr. Frederick C. Cordes, clinical professor of ophthalmology.  
Dr. William A. Key, assistant clinical professor of orthopedic surgery.  
Dr. Fred H. Kruse, clinical professor of medicine.  
Dr. Jesse L. Carr, assistant professor of medicine.  
Dr. Daniel G. Morton, assistant professor of obstetrics and gynecology.  
Dr. Edgar J. Munter, assistant clinical professor of medicine.  
Dr. Hartzell H. Ray, assistant clinical professor of pediatrics.  
Dr. William A. J. Reilly, assistant clinical professor of pediatrics.  
Dr. James F. Rinehart, associate professor of pathology.  
Dr. Harry C. Shepardson, associate clinical professor of medicine.  
Dr. Wallace B. Smith, clinical professor of otorhinolaryngology.

### COLORADO

**Personal.**—At a meeting of the Pueblo County Medical Society, April 7, life membership was conferred on Dr. Thomas A. Stoddard, Pueblo. Dr. Jesse W. White, Pueblo, addressed the society on "Thyroid and Pregnancy."—Dr. Vera H. Jones, Denver, has been named director of maternal and child health and care of crippled children under the state board of health and the social security administration, it is reported.—Dr. Claude E. Cooper is now professor of otolaryngology and head of the department at the University of Colorado School of Medicine, Denver.

**Society News.**—At a meeting of the Medical Society of the City and County of Denver, June 2, Dr. Robert K. Dixon spoke on "Treatment of Duodenal Ulcer" and Dr. William M. Bane, "Some External Eye Conditions."—At a meeting of the El Paso County Medical Society in Colorado Springs, May 6, speakers were, among others, Drs. Robert A. Youngman on "Pulmonary Hypertension"; Lyle B. Hart, "Cholelithic Disease with Postoperative Liver Shock," and Frederic F. DeMetovich, "Diverticulitis."—The Fremont County Medical Society was addressed in Canon City, May 25, by Drs. Albert W. Glatthar and Harold T. Low, both of Pueblo, on dermatology and tuberculosis of the epididymis and the prostate gland, respectively.

### CONNECTICUT

**Portrait of Dr. Dodge.**—Friends of Raymond Dodge, Ph.D., professor of psychology, Institute of Human Relations, Yale University, New Haven, have presented a portrait of him to the university. The portrait, by Lloyd Bowers Embury of the Yale School of Fine Arts, has been hung in the Institute of Human Relations. Dr. Dodge, who is 65 years old, has been affiliated with Yale since 1924; he has written extensively in his field. His retirement from the Yale faculty has been announced.

**Personal.**—Dr. George Mansfield Craig has been appointed medical examiner of Haddam.—Dr. Theodore G. Klumpp, assistant clinical professor of medicine in the department of internal medicine at Yale University School of Medicine, has been granted a leave of absence for the academic year 1936-1937 to go to Washington, where he will make a study of glandular and antianemic preparations with the Food and Drug Administration of the U. S. Department of Agriculture.—Dr. Robert V. Boyce has been named acting superintendent of health of Hartford, succeeding Dr. Thomas F. O'Brien, who was granted a leave of absence on account of illness.—Dr. Louis O. LaBella has been appointed health officer of Middletown.

**Society News.**—At the spring meeting of the Connecticut Association of Public Health and Clinical Laboratories, in Hartford, May 27, Dr. Alfred L. Burgdorf discussed "The Connecticut Marriage License Law," and Dr. Elliott S. Robinson, "Immunologic Application of Placental Extracts."—Dr. Walter I. Lillie, Philadelphia, discussed "Ophthalmological Changes Produced by Intracranial Lesions" before the Fairfield County Medical Association in Bridgeport, April 14, and Dr. Temple S. Fay, Philadelphia, "Diagnosis of Cerebral Tumors."—At a meeting of the Hartford County Medical Association in Hartford, April 7, Judge Newell Jennings of the superior court of Hartford County, among others, spoke on "Expert Medical Testimony."

### DISTRICT OF COLUMBIA

**Personal.**—Dr. Daniel L. Finucane has been appointed associate professor of clinical medicine at Georgetown University School of Medicine, Washington.

**The Borden Lectureship.**—The William Cline Borden Memorial Lectureship in Surgery has been established at George Washington University School of Medicine by Mrs. William Cline Borden and Dr. Daniel LeRay Borden, wife and son of the former dean of the medical school. The presentation for the Borden family was made at the May meeting of the university medical society by Dr. William Johnston Mallory, professor of medicine; it was accepted by Cloyd Heck Marvin, LL.D., president of the university. Dr. Borden's son, who is associate professor of surgery at George Washington, presented a biographic sketch of his father. It is planned to give the lectures at the medical school annually. Dr. Borden, who died in 1934, was professor of surgery and dean of George Washington University School of Medicine and surgeon in chief of the George Washington University Hospital from 1909 to June 1931.

**District Medical Election.**—Dr. William Mercer Sprigg, Washington, was elected president of the Medical Society of the District of Columbia, and Dr. Coursen B. Conklin was reelected secretary. The next annual session will be held at Washington, May 5-6, 1937. At the annual scientific assembly of the society, May 6-7, one feature was a "tri-state afternoon," when the following presented the program:

Dr. Upton D. Nc	Relation of the General Prac-
tionator to the	Centers.
Dr. William Way	Diagnosis and Treatment of
Tumors of the Intestinal Tract.	
Dr. James N. Greear Jr.,	Treatment of Eye Injuries.
Dr. Guy W. Leadbetter,	The Painful Shoulder.
Dr. Earle G. Breeding,	Causes and Treatment of Deafness.
Dr. Robert Lomax Wells,	Basic Clinical Factors in Evaluating Treat-
ment and Prognosis in Hyperthyroidism.	

Clinics were also presented and other speakers included:

Dr. Walter Clarke, New York, The New York Plan of Attack on Syphilis.  
Dr. James P. O'Hate, Boston, Practical Problems in Glomerulonephritis.  
Dr. Chevalier L. Jackson, Philadelphia, Gastroscoy as an Aid to Diagnosis.

### ILLINOIS

**Society News.**—Dr. Howard L. Alt, Chicago, addressed the Marion County Medical Society at Centralia, May 27, on "Use of Blood Chemistry in the Diagnosis and Treatment of Disease."—At a meeting of the Muskegon County Medical Society, May 22, Dr. Oscar B. Nugent, Chicago, spoke on "Diseases of the Eye in Relation to General Medicine."—Dr. Paul H. Holinger, Chicago, discussed bronchoscopy before the Kankakee County Medical Society, May 14.—At a joint meeting of the East St. Louis and Belleville branches of the St. Clair County Medical Society, June 4, Dr. Joseph Edgar Stewart, St. Louis, read a paper on fractures.—At a meeting of the Henry County Medical Society in Kewanee, May 14, Drs. Andrew C. Ivy and Raymond W. McNealey, Chicago, discussed "Therapy of Biliary Tract Disease from the Viewpoint of Applied Physiology" and "Surgical Manage-

ment of Biliary Tract Disease" respectively.—Dr. John R. Caulk, St. Louis, addressed the Macoupin County Medical Society in May on "Obstruction at the Bladder Neck in Men, Women and Children."—Dr. Aaron Arkin, Chicago, addressed the Peoria City Medical Society, May 26, on "Differential Diagnosis of Organic Heart Disease."—Dr. Frank H. Ewerhardt, St. Louis, discussed "Fever Therapy" before the Adams County Medical Society in Quincy, May 11.—The Vermilion County Medical Society was addressed, May 5, by Dr. James H. Hutton, Chicago, on treatment of hypertension and diabetes by x-rays.

### CHICAGO

**Eclampsics Wanted for Study.**—The Chicago Lying-In Hospital wishes several cases of eclampsia for study and for a motion picture. Physicians who have worthy indigent patients in this condition are asked to notify the hospital, Plaza 7200. The patients will be sent for and there will be no charge of any kind.

### KANSAS

**Society News.**—At a meeting of the Marion County Medical Society in Marion, May 6, Drs. Wendell M. Tate, Peabody, and Abraham C. Eitzen, Hillsboro, discussed "Leukemia with Its Nervous Manifestations" and "Epidemic Encephalitis" respectively.—The Greenwood County Medical Society was addressed in Eureka, May 6, by Dr. John L. Kleinheksel, Wichita, among others, on "Diabetes in Pregnancy" and "Diabetes as Associated with Hardening of the Arteries."—Dr. Daniel V. Conwell, Halstead, read a paper on "Organic Psychosis" before a recent meeting of the Northwest Kansas Medical Society in Norton, and Dr. Charles F. Taylor, Norton, gave an illustrated talk on a visit to the leper colony at Carville, La.—Dr. Lerton V. Dawson, Ottawa, discussed medical economics before the Osage County Medical Society in Alta Vista, May 29.—Dr. Ferdinand C. Helwig and Boyd S. Gardner, D.D.S., Kansas City, Mo., addressed a joint meeting of the Sumner County medical and dental societies in Wellington, May 28, on treatment of Vincent's angina by electrocoagulation.

### LOUISIANA

**Bills Introduced.**—S. 241 proposes to enact an entirely new workmen's compensation act. Among other things, it proposes to require an employer (1) to pay the compensation stated to an employee who has received "personal injury by accident arising out of and in the course of such employment" and (2) to "pay for reasonable medical, surgical and hospital services and medicines not to exceed \$250 in value, unless the employee refuses to allow them to be paid for by the employer." The italicized words seem particularly significant in view of the provision in the present workmen's compensation act which requires an employer "to furnish" reasonable medical, surgical and hospital services, and medicines in the amount noted above to injured workmen. This possibly leaves an inference that, if the present bill is adopted unaltered in this respect, an injured workman will have the right to select his own physician and thus render the employer liable within the limits noted above. S. 251 proposes to create a board of chiropractic examiners and to regulate the practice of chiropractic, defined as "the science of palpating and adjusting the articulations of the human spinal column by hand only." All persons of good moral character who have been continuously engaged in the practice of chiropractic in the state for twelve months prior to the passage of this bill are to be licensed without examination even though they have engaged in such practice in violation of the present law. All other applicants for licenses must be graduates of a school or college teaching chiropractic and giving a course of at least three years of six months each in anatomy, physiology, symptomatology, hygiene, sanitation, chiropractic analysis and principles and practice of chiropractic. H. 361 proposes to provide that physicians, midwives and other persons who are required to file certificates of births and deaths to the appropriate state or county officials shall be entitled to receive 25 cents for each certificate thus filed. H. 501 proposes to exempt licensed chiropractors from paying any state, city or parish license fees. H. 572, to amend the medical practice act, proposes to permit a person legally engaged in the business of refracting or fitting glasses to the human eye to use the title "optometrist." H. 659, to amend the dental practice act, proposes so to define unprofessional conduct, which is a ground for the revocation of a license to practice dentistry, as to embrace (1) all advertising other than the display of a professional card at the licentiate's place of business, (2) advertising through the press, on the radio or by the use of hand-



bills, circulars or periodicals other than professional cards stating only the name, address, profession, office hours and telephone connections of the licensee, and (3) employing or making use of advertising solicitors or publicity agents or soliciting employment personally or by representatives. H 681 proposes to create a "School Children's Health and Medical Board" to consist of three physicians, to be appointed by the governor for four year terms. The duties of the proposed board are to examine all school children of the state annually, to file a report of the findings of those examinations with the state board of education and to mail the parent or guardian of each child so examined a written report of the examination. The bill proposes to authorize an annual appropriation of \$200,000 to carry the proposed provisions of the bill into effect. S 45 proposes to prohibit a physician from disclosing in any legal proceedings, except at the instance of his patient, any communication made to him by a patient under his charge or by one seeking professional advice. H 347 proposes to enact a "state food, drugs and cosmetic act" and to repeal all laws in conflict therewith. The present laws proposed to be repealed conform closely to the present federal Pure Food and Drugs Act of 1906. The provisions of H 347, on the other hand correspond closely to the provisions of United States S 5, the Copeland bill, as it was reported out of committee in the United States House of Representatives, May 22, 1936, which was discussed and adversely criticized in THE JOURNAL, May 20, pages 1896-1898.

### MICHIGAN

**Program of Maternal and Child Health.**—A program of maternal and child health in Michigan, covering principally rural areas, was approved at a meeting of the house of delegates of the state medical society April 30. The plan, submitted by the state health department provides that before a program is set up in a county it must be approved by an advisory board appointed by the county medical society. Further, it will not include clinics, treatments or advice with reference to treatment of any kind, embracing only the cooperation of the private physician. Contemplated lectures to lay groups must first be presented in synopsis form to the advisory committee, while copies of the lecture must be given to each member of the society. Overactivity of lay groups as a result of this educational program will be discouraged and curtailed as far as possible according to the advice of the advisory committee of physicians, the state medical journal reports.

**Anniversary Microscope Presented to Dr. Novy.**—Dr. Frederick G. Novy, professor of bacteriology and chairman of the executive committee of the University of Michigan School of Medicine, Ann Arbor, was presented with a microscope at a luncheon for members of the American Association for the Advancement of Science in Rochester, N. Y., June 18. Edward Bausch, chairman of the board of directors of the Bausch and Lomb Company, made the presentation, and Dr. Novy gave an address entitled "Some Results of Microscopic Research Which Have Been of Significance for Human Welfare." This was the 250,000th microscope manufactured by Bausch and Lomb. The first instrument completed by this company was shown at the Philadelphia Centennial Exposition in 1876. This occasion also commemorates the fiftieth anniversary of Dr. Novy's graduation from the University of Michigan. Dr. Novy has been associated with Michigan since 1886. He became professor of bacteriology and director of the Hygienic Laboratory at the school in 1902, he has been chairman of the executive committee and faculty of the medical school since 1930 and is also dean.

### MINNESOTA

**Illegal Practitioners Sentenced.**—Ramon L. De Silvio was sentenced to one year at hard labor in the St. Louis County Work Farm by Judge Edward Freeman May 2 following his plea of guilty to practicing without a basic science certificate. He had recently been treating patients in Hibbing. De Silvio, a Negro, admitted he had falsely represented himself as a chemist and that he had never had any education above the sixth grade in school. He also admitted that he had been arrested for a similar offense in Boston. He had collected sums of money ranging from \$2.50 to \$17 per patient. Mrs. Frances Stanch, Albert Lea was sentenced to one year at hard labor in the woman's reformatory at Shakopee, April 21, by Judge Brill. She pleaded guilty to having performed an abortion stating that she had no medical education except such as she acquired as a practical nurse on a few occasions in Albert Lea.

### MISSISSIPPI

**Changes in Hospital Superintendents.**—Dr. John S. Hickman, Philadelphia, a member of the state legislature, has been appointed superintendent of the East Mississippi Hospital, Meridian, succeeding Dr. Russell R. Welch. The appointment was effective June 1. Dr. Louis M. Magee, Prentiss, has been named to succeed Dr. William K. Stowers as superintendent of the State Charity Hospital, Natchez. Dr. Thomas R. Beech, Ellisville, has been appointed superintendent of the South Mississippi Charity Hospital, Laurel, he succeeds Dr. Alcus J. Carter. Dr. Toney E. Hall, Shelby, has been designated superintendent of the State Charity Hospital at Jackson, succeeding Dr. DeWitt T. Brock. The appointment was effective June 1.

### MONTANA

**State Medical Meeting at Billings.**—The fifty-eighth annual meeting of the Medical Association of Montana will be held at the Commercial Club, Billings, July 8-9, under the presidency of Dr. Louis H. Fligman, Helena. Dr. James I. Wernham, Billings, president of the Yellowstone Valley Medical Society, will give the address of welcome, and Dr. Harry J. McGregor, Great Falls, vice president of the state association, the response. Speakers will include:

Dr. Roscoe C. Webb, Minneapolis, Fractures  
Dr. William A. O'Brien, Minneapolis, Treatment of Anemia, Indications for Radiation Therapy  
Dr. Anthony J. Lauzi, New York, Newer Methods of Diagnosis and Treatment of Pneumonia  
Dr. Ernest D. Hitchcock, Great Falls, Highlights in Routine Gastric Examinations  
Dr. Henry Schmitz, Chicago, Is There a Period of Absolute Sterility in Women? Report of Treatment of Pelvic Carcinomas with 800 Kilovolts After Thirty Months  
Dr. Lawrence M. Randall, Rochester, Indications for Cesarean Section  
Dr. Edward S. Murphy, Missoula, Montana's Pioneer Physician  
Dr. Arthur J. Movius, Billings, Subphrenic Abscess  
Dr. Allen R. Foss, Missoula, Manifestations of Allergy in General Practice

The Health Association of Montana will meet in the Commercial Club, July 6-7, and the Montana Academy of Ophthalmology, July 7, in the Northern Hotel.

### NEBRASKA

**Society News.**—Drs. Abram E. Bennett and Robert D. Schrock, Omaha, addressed the Madison Six Counties Medical Society at Norfolk, April 21, on "Artificial Fever Therapy: Results Obtained with the Kettering Hypertherm" and "Fractures at the Elbow and About the Knee Joint" respectively. Speakers at the spring meeting of the Third Councilor District Medical Society in Auburn, April 28, were the following members of the faculty of Creighton University College of Medicine, Omaha: Drs. Raymond L. Traynor, on "Treatment of Heart Failure", Ernest Kelly, "The Doctor and His Nervous Patients", Charles McMartin, "Diagnosis of Surgical Diseases of the Kidney", and Frederick J. Schwertly, "Infections of the Hands".

### NEW HAMPSHIRE

**State Medical Election.**—Dr. Frank E. Kittredge, Nashua, was elected president of the New Hampshire Medical Society at its meeting in Manchester, May 27. Dr. Samuel T. Ladd, Portsmouth, was elected vice president and Dr. Carleton R. Metcalf, Concord, reelected secretary. Next year's meeting will be held in Manchester.

### NEW YORK

**University News.**—Dr. Joseph C. Dorne, medical director of the Jewish Hospital, Philadelphia, will give a short course in hospital operation at Cornell University, Ithaca, in the two weeks beginning June 29. Admission is limited to those who are or have been actively engaged in hotel or hospital work. The Rockefeller Foundation has recently made two grants totaling \$16,400 to the University of Rochester School of Medicine and Dentistry. One of \$10,000 will be used for investigation of filtrable viruses under the direction of Dr. George Packer Berry, professor of bacteriology and associate professor of medicine, one of \$6,400 will be used to aid Dr. Stafford L. Warren, associate professor of medicine and radiology, in a study of the biologic effects of heat.

### New York City

**Personal.**—Dr. Frank Lusk Babbott Jr., president of Long Island College of Medicine, was one of six alumni of Columbia University who received the university medal for achievement since graduation. Dr. Babbott graduated from the College of Physicians and Surgeons in 1918.

**Society News.**—At a meeting of the International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists, April 24, a symposium on arthritis was presented by Drs. Gertrude J. Chandlee, Jaques Kroner, Joseph Echtman and S. Epstein and Max Balaban, D.D.S. Dr. Jacob M. Gershberg was recently reelected president of this society; Dr. Reginald Burbank is general secretary and Dr. Emilio L. Hergert, recording secretary.—Dr. Charles R. Stockard addressed the New York Pathological Society, May 28, on "Hereditary Early Death in Localized Neurons with Resulting Paralysis in Dogs" and Drs. Eugene Clark and Adolph R. Berger, on "Hemorrhagic Extravasations into Valvular Leaflets and Their Relationship to Pulmonary Embolism."

**Symposium on Typhoid Carriers.**—An all day session of discussions of the typhoid carrier problem was held at New York Post Graduate Hospital, June 6, under the auspices of the combined medical and surgical clinic for the study of disease of the liver and biliary tract. Dr. Charles Gordon Heyd, Vice President of the American Medical Association, demonstrated cholecystectomy for cure of the carrier state and members of the faculty of New York Post Graduate Medical School spoke as follows: Drs. Eilif C. Hanssen, on "Treatment of Typhoid Carriers"; Ward J. MacNeal, "Bacteriology of Typhoid Infection"; John Russell Twiss and Bernard Marraffino, "Biliary Drainage in Detection and Release of Typhoid Carriers." In the afternoon the following program was presented:

Dr. Millard Knowlton, Hartford, Conn., The Typhoid Carrier Problem in Connecticut

Dr. Irvin E. Deibert, Camden, N. J., Results Following Cholecystectomy in Typhoid Carriers in the State of New Jersey.

Dr. Ernest L. Stebbins, Albany, N. Y., Detection and Control of Typhoid Carriers.

Dr. Samuel Frant, New York, The Typhoid Carrier Situation in New York City.

## NORTH CAROLINA

**Department for Crippled Children Established.**—The state department of health has recently established a department for crippled children in cooperation with the Children's Bureau of the U. S. Department of Labor, in the administration of the Social Security Act. Objectives outlined in the bulletin of the health department are to locate crippled children, of whom it is estimated there are about 20,000 in the state; to obtain expert diagnosis in all parts of the state; to provide expert treatment and hospital care; to establish a field supervisory service and follow-up service, and to engender public interest in the problem of the crippled child.

**Society News.**—The Catawba Valley Medical Society met in Morganton, May 26, with the following guest speakers, all of New York: Drs. John Russell Twiss, on "Differential Diagnosis and Clinical Management of Different Types of Gallbladder Disease"; Milton A. Bridges, "Dietary Management of Gallbladder Disease," and Rupert Franklin Carter, "Diagnosis and Management of Surgical Conditions with Respect to the Gallbladder." Dr. Isaac H. Manning, Chapel Hill, spoke on the Hospital Saving Association of North Carolina.—At the spring meeting of the Tenth District Medical Society at Spruce Pine, May 27, guest speakers included Drs. Olin B. Chamberlain, Charleston, S. C., on "Spastic Children" and Edward T. West, Johnson City, Tenn., "Appendicitis."

## NORTH DAKOTA

**Society News.**—Dr. Edgar A. Pray, Valley City, has been elected president of the North Dakota Anti-Tuberculosis Association.—Dr. Leonard W. Larson, Bismarck, was elected president of the North Dakota Health Officers' Association at its annual meeting in Jamestown May 18.—Dr. Archibald D. McCannel, Minot, addressed the Stutsman County Medical Society in April on modern economic aspects of medicine.—Dr. John P. Miller, Grand Forks, was elected president of the North Dakota Academy of Ophthalmology and Otolaryngology at the annual meeting in Jamestown, May 18, and Dr. Frederick L. Wicks, Valley City, was reelected secretary. Dr. Erling W. Hansen, Minneapolis, was the guest speaker on "Allergy in Ophthalmology."

## OHIO

**Public Health Association Meeting.**—Dr. Edgar R. Hiatt, Troy, was reelected president of the Ohio Public Health Association at the annual meeting in Columbus, May 14. Among speakers were Drs. Allen W. Freeman, Baltimore, on "Fundamentals in Public Health Organization Needed in Ohio"; George M. Curtis, Columbus, "Compression Therapy," and Louis I. Dublin, Ph.D., New York, "Analysis of the Tuberculosis Mortality Figures for the Past Thirty-Five Years."

**Society News.**—Drs. Charles I. Stephen, Ansonia, and Howard V. Dutrow, Dayton, addressed the Darke County Medical Society, Greenville, May 15, on "Hemophilia" and "Ethical, Political and Economic Changes in Medicine" respectively.—Dr. John W. McCammon, Cincinnati, addressed the Marion Academy of Medicine, May 5, on "Disabilities of the Feet."—Speakers at a meeting of the Putnam County Medical Society, Ottawa, May 6, were Drs. Frank C. Anderson, Mount Vernon, and Paul M. Holmes, Toledo, on "Diagnosis of Tuberculosis" and "Surgery in Tuberculosis" respectively.—At a meeting of the Columbiana County Medical Society, Lisbon, May 19, speakers included Drs. Jacob W. Schoolnic, East Liverpool, on "The Present Status of Treatment of Endocrine Disturbance"; Virgil E. McEldowney, Newell, W. Va., "Prevailing Therapy in Treatment of Hay Fever," and Lea A. Cobbs, Salem, "Significance of Arterial Hypertension."—At a meeting of the First District Medical Society in Wilmington, May 5, speakers were Drs. Malcolm O. Cook, Hamilton, on "Diagnosis and Treatment of Intestinal Obstructions"; Hugh C. Schick, Xenia, "Toxemias of Pregnancy"; Russell L. Haden, Cleveland, "Study and Treatment of Anemia," and Willis D. Gatch, Indianapolis, "Recognition and Treatment of Bowel Obstruction."—Dr. George B. Magrath, Boston, addressed the Montgomery County Medical Society, Dayton, at its annual dinner meeting, June 5, on his experiences as a medical examiner.

## OKLAHOMA

**Clinical Conference at Tulsa.**—The Tulsa Clinical Society presented its spring clinical conference June 10-11. Clinics were presented at Morningside and St. Johns Hospitals and there was a program of addresses at the Mayo Hotel Tuesday afternoon. Tuesday evening there was a banquet with Dr. Edward H. Cary, Dallas, Texas, as the guest speaker. Thursday afternoon was devoted to a golf tournament at the Avery Golf Club, followed by a barbecue dinner at the farm of Dr. Fred A. Glass at Owasso. Officers of the Tulsa Clinical Society are Drs. James C. Brogden, president; Russell C. Pigford, vice president, and Roger Q. Atchley, secretary.

## PENNSYLVANIA

**Society News.**—Dr. Franklin L. Payne, Philadelphia, addressed the Lycoming County Medical Society, Williamsport, June 12, on "Significance of Abnormal Bleeding at the Time of and After the Menopause." At an evening session Dr. Payne conducted a seminar and open discussion on menopausal abnormalities.—A symposium on hyperthyroidism was presented at a meeting of the Fayette County Medical Society, Uniontown, June 4, by Drs. Lucian D. Johnson, Connellsville, Elliott B. Edie, Clark M. Luman and Herbert Lund, all of Uniontown.—Dr. Paul P. Riggle, Washington, addressed the Washington County Medical Society, Washington, May 13, on "Etiology and Treatment of Peptic Ulcer."—Dr. James M. Blackwood addressed the Lawrence County Medical Society, New Castle, June 4, on "Tumors of the Eyeball."

## Philadelphia

**Personal.**—Dr. Leroy M. A. Maeder has resigned as medical director of the Pennsylvania Mental Hygiene Committee to devote his time to private practice.—Dr. William H. Teller was the guest of honor at a dinner, May 20, at the Warwick, celebrating fifty years of continuous service to the Jewish Hospital. The staff and association of ex-residents were hosts.

**University News.**—Dr. Isidor S. Ravdin, J. William White professor of surgical research in the University of Pennsylvania School of Medicine and professor of surgical research in the Graduate School of Medicine, has been appointed to the newly established George L. and Emily McMichael Harrison professorship of surgery at the university. The department of research surgery was established under the terms of the will of the late Mr. Harrison, who provided that the income of his residuary estate, approximating \$40,000 a year, be used for this purpose.

## TENNESSEE

**Health at Nashville.**—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 6, indicate that the highest mortality rate (21.1) appeared for Nashville and the rate for the group of cities as a whole was 11.6. The rate for Nashville for the corresponding week of 1935 was 17.5 and that for the group of cities, 11.4. The annual rate for the eighty-six cities for the twenty-three weeks of 1936 was 13.2 as against a rate of 12.4 for the corresponding period of last year. Caution should be used in the interpretation of

these weekly figures, as they fluctuate widely. The fact that a city is a hospital center for a large area or that it has a large Negro population may tend to increase the death rate.

**Sectional Association Meetings**—The West Tennessee Medical and Surgical Association held its forty-fifth annual session in Jackson, May 21, under the presidency of Dr. James L. McMillan, Decaturville. Among speakers were Drs. Shields Abernathy, Memphis, on "Early Diagnosis and Prevention of Cancer"; Tinsley R. Harrison Nashville, "Cardiovascular Emergencies"; Willis C. Campbell, Memphis "Physiologic Principles Applied to the Treatment of Fractures," and Jere L. Crook, Jackson, "Personal Experiences in the Use of Radium for Relief of Cancer." Dr. Erle W. Hillsman, Trezevant, was elected president. The Upper Cumberland Medical Society held its annual meeting at Red Boiling Springs, June 16-17. Among guest speakers were Drs. William F. Gardner, Louisville, Ky., on "Advantageous Neurotic Reactions"; Carl C. Howard, Glasgow, Ky., "Conquest of Pain"; Franklin Jelsma, Louisville, "Diagnosis and Treatment of the More Common Brain Lesions," and Walter L. Rucks, Memphis, "Abdominal Pain in Children."

### TEXAS

**Health Education Campaign**—The state health department has announced a program of public health education to be financed with a grant from funds made available by the social security act. The first activity will be a campaign in connection with maternal and child health, carried out in cooperation with the state medical association. A two day refresher course for physicians will be presented in three towns in each councilor district of the association, under the direction of the councilor, assisted by a committee composed of an obstetrician, a pediatrician and a general practitioner. In addition a public health program will be presented on the evening of the two day meeting. The committee on maternal welfare of the state medical association has been asked to serve as an advisory committee to the state department of health. This committee has been enlarged to ten members and has changed its name to "committee on maternal and child health." Members are Drs. Calvin R. Hannah, Dallas, chairman, William W. Maxwell, San Antonio, George H. Beavers Jr. and Caleb O. Terrell, Fort Worth, Willard R. Cooke and William Boyd Reading, Galveston, Corwin L. Maxwell, Myra, Hugh Leshe Moore, Dallas, George W. Edgerton Jr., Harlingen, and Samuel E. Thompson, Kerrville.

### VIRGINIA

**University News**—Dr. Albert M. Snell, Rochester, Minn., addressed the University of Virginia Medical Society, May 7, on "Pathologic Physiology of Common Duct Stone." Dr. Frederick M. Hodges, Richmond, spoke April 27 on "X-Ray Therapy of Skin Infections."

### WASHINGTON

**Society News**—Dr. George Warren Pierce, San Francisco, addressed the King County Medical Society, Seattle, May 18, on "Problems of Reconstruction Surgery." At an extra meeting June 1 Dr. Laurence Selling, Portland, Ore., spoke on "Urologic Complications of Pernicious Anemia." The Seattle Surgical Society held a clinic meeting at Harborview Hall June 6, in honor of Dr. Albert I. Bouffleur. At a morning session there were clinics on fractures, the afternoon was devoted to traumatic surgery. At a dinner at the Rainier Club Dr. Homer D. Dudley and E. S. Franklin discussed medical and legal aspects respectively, of "Evaluation of Disability." Dr. William C. Spindel introduced Dr. Bouffleur, who related experiences of his long practice. Dr. Bouffleur, now 72 years old, was at one time assistant professor of surgery, Rush Medical College, Chicago.

### WISCONSIN

**Opening in Tuberculosis Work**—The state bureau of personnel announces an examination for a position as senior physician at the state tuberculosis sanatorium at Wales. The closing date for filing is July 3. Application blanks may be obtained from the bureau at the state capitol, Madison. The salary is \$200 a month less complete maintenance, subject to departmental waiver. Among the minimum qualifications for applicants are a license to practice in Wisconsin or eligibility for such a license, extensive experience in an institution, and familiarity with laws, rules and regulations relative to medical work in state institutions.

### GENERAL

**Medical Bill in Congress**—*Change in Status*. H. R. 12556 has been favorably reported to the Senate, without amendment, proposing to enact a Treasury Agency Organization Act. This bill proposes to create a Treasury Agency Service and to authorize the Secretary of the Treasury to coordinate the functions of investigation, detection or prevention of the violations of law conferred on the new Agency Service with the performance of the functions of investigation, detection or prevention of the violations of the narcotic laws conferred or imposed by law on the Bureau of Narcotics.

**Bequests and Donations**—The following bequests and donations have recently been announced:

Presbyterian Hospital, Philadelphia, \$35,000 from a trust estate left by Andrew Blair, who died in 1898.

Methodist Episcopal Hospital, Philadelphia, \$25,000 by the will of Miss Sarah Elizabeth Simpson.

Hahnemann Hospital, \$20,000, and Philadelphia Home for Incurables, \$10,000 in trust funds left by the late Marie W. Jeanes.

Salem City Hospital, Salem, Ohio, \$2,000 to endow two free rooms, from the will of Howard F. Stratton, Swarthmore, Pa.

Children's Hospital, Philadelphia, \$10,000 in trust from the estate of Howard Fuguet.

St. Luke's and Presbyterian hospitals, Chicago, \$25,000 each by the will of William O. Goodman.

University of Pennsylvania School of Medicine, Philadelphia, \$10,000 by the will of the late Dr. William M. Martin, Mobile, Ala., a graduate of 1874.

New York Hospital, New York, \$50,000 and Nassau Hospital, Mineola, L. I., \$25,000 by the will of Lewis Cass Ledyard Jr.

Rockefeller Institute and Lehigh Hospital, New York, \$10,000 each and Beth Israel Hospital, New York, \$6,000 by the will of the late Joseph Leblang.

Rush Hospital and Oncologic Hospital, Philadelphia, \$1,500 and \$1,000 respectively by the will of the late Marge S. Norton.

Lankenau Hospital, Philadelphia, \$5,000 by the will of Carl Grubman to endow a free bed.

New York University College of Medicine and New York Eye and Ear Infirmary, \$5,000 each by the will of the late Dr. Edward B. Deuch.

Brooklyn Jewish Hospital, \$1,000 by the will of the late Mrs. Rachel Levy.

**Society News**—Henry H. Donaldson, Ph.D., Philadelphia, was elected president of the American Neurological Association at the annual session in Atlantic City, June 3. Drs. Samuel D. Ingham, Los Angeles, and Edwin G. Zabriskie, New York, were elected vice presidents and Dr. Henry A. Riley, New York, was reelected secretary. Dr. Frederick J. Taussig, St. Louis, was elected president of the American Gynecological Society at its annual meeting in Atlantic City, May 26. Drs. George W. Kosmak, New York, and Sidney A. Chalfant, Pittsburgh, were elected vice presidents and Dr. Richard W. Telinde, Baltimore, secretary. Dr. Gilbert J. Thomas, Minneapolis, was elected president of the American Urological Association at its annual meeting in Boston, May 20. Dr. Clyde L. Deming, New Haven, Conn., was elected secretary. Dr. George M. Coates, Philadelphia, was elected president of the American Laryngological, Rhinological and Otological Society at its annual meeting in Denver, May 18-20. The following vice presidents were elected: Drs. De Forest C. Jarvis, Barre, Vt.; Charles D. Blassingame, Memphis, Tenn.; Alfred Levy, Chicago; Frederick A. Figi, Rochester, Minn.; and David R. Higbee, San Diego. Dr. Carlton Stewart Nash, Rochester, N. Y., was elected secretary.

## Government Services

### Examination for Public Health Service

The U. S. Public Health Service announces that an examination for entrance into the service will be held in Washington, D. C., June 29. Immediate application should be made to the surgeon general by those who wish to take the examination. Applicants must be graduates of class A medical colleges and not more than 39 years old at the time of the examination. Following are the minimum requirements: three years of college premedical work, four years of medical education with a medical degree, two years of graduate instruction or work in research and two additional years devoted to the subject in which graduate instruction was received or to research. The entrance salary is \$3,339 for appointees without dependents, \$3,798 for those with dependents. The examination will consist of a thorough physical examination and academic, professional and general fitness tests, all of which consumes approximately about one week. Candidates must defray their own traveling expenses to Washington.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 2, 1936.

#### The Medical Aspects of Abortion

The law concerning abortion is unsatisfactory. It lays down penalties for "unlawfully" inducing abortion without stating what is lawful induction. Hence physicians are often unwilling to perform therapeutic abortion owing to uncertainty as to the legal risk. Therefore in 1934 the council of the British Medical Association appointed a committee consisting of obstetricians and others to report on the medical aspects of abortion. This committee has now made a lengthy report. It has been suggested that the physician need have no uncertainty as to his freedom to induce abortion, as the law is adaptable in practice, although not in theory, to changes in social thought. But the committee replies that the responsibility of interpreting public opinion on such matters should not be placed on the physician. Further, physicians differ widely in their views and in their practice. As an example, pregnancy following rape below the age of consent may be taken. The law seems to imply that pregnancy in a girl of 13, whose pelvis is too small for safe delivery, should be carried to term for cesarean section. What is the wish of the community? Some physicians would refuse to induce abortion, while others would not hesitate. A similar difference exists as to abortion for eugenic reasons. Leading physicians submitted memoranda to the committee. It is generally believed that termination of pregnancy in the early months is legal when carried out with the object of safeguarding the mother's life or health. Nevertheless the law leaves the physician exposed to risks. It is not only conviction which is dreaded; indictment, however unjustifiable, may damage his reputation. The result is that he may demur to perform therapeutic abortion, with risk of sacrifice of the health or life of the patient. While it is impossible to provide exact indications for the induction of abortion, the committee considers that the law should at least contain an explicit statement of the principles of the lawful termination of pregnancy. But this would not remove all difficulties, for differences of opinion with regard to the urgency of the medical indications may expose an honorable physician to the risk of his judgment being publicly impugned, even when he is protected against the major risk of criminal intent. To safeguard him the committee suggests that abortion should be carried out only on the approval of two physicians. To remove any question of collusion, one might have some recognized status in the matter.

#### THE INDICATIONS FOR THERAPEUTIC ABORTION

The committee summarizes at length the indications for therapeutic abortion. In heart disease a previous attack of congestive heart failure is a certain indication. Congestive heart failure during the first three months is not common, but when it occurs so early the uterus should be emptied after suitable preoperative treatment. Other indications are auricular fibrillation, repeated hemoptyses, paroxysmal tachycardia, mitral stenosis with evidence of antecedent embolism, myocardial degeneration, arterial disease with high blood pressure, enlarged heart and progressive bacterial endocarditis.

Of renal conditions, chronic nephritis is an indication not only because of the damaging effect of pregnancy on the kidneys but also because of the liability of the death of the fetus. A history of eclampsia or preeclampsia in a previous pregnancy with recurrence of symptoms at an early stage of a subsequent pregnancy may necessitate induction. So may severe pyelitis or tuberculosis.

Of pulmonary conditions, tuberculosis is largely the problem. In active tuberculosis the question should be considered in the early months. After the third or the early part of the fourth month the effects of the disease are as marked after intervention as if the pregnancy had been allowed to proceed. In acute rapidly spreading disease, even in the early months, induction as a rule is of little use. But when there is a history of antecedent active disease and indications of recent activity are found, and especially if there is evidence of laryngeal or intestinal lesions, abortion is indicated in the early months. In arrested tuberculosis the pregnancy should be allowed to continue.

Blood conditions—leukemia, Hodgkin's disease, splenic or aplastic anemia, refractory pernicious anemia and thrombocytopenia—may be indications. Eugenic considerations are generally regarded as outside the scope of therapeutic abortion, but the committee believes that there may be justifiable indications. The offspring of two mental defectives will almost certainly be mentally defective. Therapeutic abortion should then be considered. Other cases in which it might be thought allowable are (1) if the father and one child are mental defectives, (2) if the father is psychopathic and one child a mental defective, and (3) if two mentally defective children have already been born.

#### Investigation of Causes of Road Accidents

The Ministry of Transport has begun a new investigation of the circumstances and causes of road accidents. Particulars of every accident, whether fatal or not, are being noted by the police and will be forwarded to the ministry for examination and analysis. This inquiry will reveal for the first time how many of the 200,000 persons injured yearly on the roads of Great Britain are only slightly hurt and how many escaped death at the cost of maiming or serious injuries. In deciding on a wider inquiry the ministry was influenced by the fact that the 6,000 to 7,000 fatal cases investigated since the beginning of last year form about 3 per cent of the total accidents involving personal injury. When reporting accidents the police will in future record the general character of the road (whether residential, shopping or business), the presence or absence of street car tracks, the width of the roadway, the weather and light, and features such as road junctions, subways or marked pedestrian crossings within a specified distance of the accident. Notes will be made of the age and sex of the persons involved and of their movements and those of the vehicles concerned immediately before the accident. The inquiry will show for the first time how many accidents occur where a speed limit is in operation and where there is no speed limit. In every case the police will be asked to state the main and contributory causes of the accidents, and these have been codified under sixty-four heads. These facts will be entered on a printed form.

#### SAFER ROADS FOR CHILDREN

Already forty-three children under 15 have been killed in London this year. A committee appointed by the board of education and the ministry of transport to advise on the promotion of safety among school children has made a most searching inquiry into the causes of road accidents among children. In their report they state that at the outset they were impressed by the serious character of the problem, its rapid growth in recent years and the complexity of the causes. Nothing less than sustained national effort, toward which every road user should contribute, will suffice to overcome this appalling menace to child life. In 1920, 857 children under 15 were killed in road accidents. By 1930 the figure had risen to 1,433. Since then the numbers have slightly declined, but in 1933 the total was 1,245. In London the fatal accident rate in 1921 was 9 per hundred thousand of the child population. In 1933 this had risen to 13. For the same two years the rates for nonfatal

accidents were 297 and 617. Analysis of the fatal accident rate for London shows that it rises rapidly from the age of 2 and is highest between the ages of 4 and 8. After this there is a decline, but after 12 there is an increase caused by fatalities among child cyclists. At all age periods more boys than girls are killed, probably because they are more venturesome. Among the causes of accidents to children are playing in the carriage way, impulsiveness, inexperience, the stealing of rides on cars, and cycling. Allowing children to ride bicycles too large for them or not in roadworthy condition increases the risk. One source of accident is the riding of scooters.

The committee makes fifty-one recommendations. These include far more drastic regulations concerning road traffic. County councils should set up children's safety committees to make periodic surveys of their areas from the point of view of road safety, including protection at road crossings near schools. Children under 7 should not be allowed on the highway unaccompanied. The most effective safeguard at busy road crossings near schools is a police constable, but authorized adult patrols might be tried. A conspicuous school sign which gives warning when children are entering or leaving school is advocated. More playing fields should be provided to keep the children off the streets. Where traffic conditions are dangerous, children should be prohibited from cycling to school. Young children should be instructed in elementary matters of road safety. The minister of transport has already authorized a special portable road sign for persons assisting children to cross the road. In large red letters on a white ground is "Stop" followed by "Children Crossing."

#### The New Midwifery Service

In the house of commons Sir Kenneth Wood, minister of health, moved the second reading of the midwives bill, the purpose of which is to establish a service of salaried trained midwives, so that every expectant mother, whatever her circumstances, can obtain a qualified midwife. The bill is also designed to raise the status of the midwifery profession by providing adequate salaries and facilities for further instruction. In the last ten years nearly 2,000 mothers have died annually in childbirth. The failure of maternal mortality to yield hardly a decimal point to sustained attacks has been a matter of national concern, contrasting with the notable results in the case of infant mortality. Last year the government spent over \$15,000,000 on maternity and child welfare, yet the maternal mortality was not substantially reduced.

The local authorities will control the new service. They will fix the salaries of the midwives employed by them and the fees to be charged. A midwife now practicing can either apply for a salaried post or continue her independent practice. On the other hand, she can within three years of the coming into operation of the new scheme surrender her practicing certificate and receive as compensation thrice the average of her emoluments for the preceding three years. The local authority can call on old or infirm midwives, unable to perform their duties satisfactorily, to retire, in which case they will receive five times the net value of their practice in the preceding three years. Arrangements are provided to enable midwives to keep abreast of current practice by attending refresher courses. The government will assist the local authorities by supplying approximately half the total additional cost incurred for the service. But the government grant will vary with the needs of the area from 25 or 30 per cent in the richest areas to 80 per cent in the poorest.

The local authorities will also be encouraged to develop further their antepartum clinics, which have increased by 20 per cent since 1931. The case of London has been specially considered, as salaried midwives are already provided by the London voluntary hospitals and about 25 per cent of the labors take place in municipal hospitals, where there are antepartum

clinics and specialists in all branches of maternity work. The new salaried midwives will have these services at their back and can enlarge their experience by taking duty in the hospitals when not engaged in domiciliary work.

#### PARIS

(From Our Regular Correspondent)

May 1, 1936.

#### Infant Vaccinated with BCG Infected by Tuberculous Parent

At a meeting, March 27, Weill-Hallé and Mouchotte reported a case showing that BCG vaccination of the new-born against tuberculosis can be rendered ineffective if the infant remains in contact with parents having pulmonary tuberculosis. The infant was brought to the crèche at the age of 10 months on account of a tuberculous osteomyelitis of one of the phalanges of the left index finger and a tuberculous submental lymph node. On the fifth, seventh and ninth days after birth, the BCG vaccine had been given by mouth. Pasteurized cow's milk had served as nourishment, and until an attack of pertussis at the age of 7 months the infant had appeared to be in good health. No tubercle bacilli were found in the pus from the suppurating submental lymph node, but three guinea-pigs inoculated at the Pasteur Institute with the same pus all presented marked tuberculous changes at necropsy. The type of tubercle bacillus found in the animal lesions has not yet been determined. There was also a positive skin reaction to tuberculin at the time the infant was first seen by the authors. The father of the infant had been married twice, his first wife dying of pulmonary tuberculosis. The second marriage took place two years later. The mother of the infant was in good health at the time the baby was born, so far as roentgenologic, clinical and bacteriologic examinations were concerned. The father also appeared to be in good health and several examinations including those of the sputum were said to be negative. But, on being subjected to another examination by Weill-Hallé and Mouchotte, although there was no clinical evidence of tuberculosis, roentgenography revealed the presence of a cavity in the right upper lobe, and a large number of tubercle bacilli were found in the sputum. The infant had evidently been temporarily immunized by the BCG vaccine and then infected through inhalation of the dried sputum of the father.

If such a careful examination of the infant's parents had not been made, the BCG vaccine would have been unjustly accused as having given rise to the tuberculosis found in the infant. The authors emphasized the necessity of controlling the vaccination of infants and that of revaccination.

#### Infant Vaccinated with BCG Infected by Apparently Cured Mother

As a continuation of the discussion of the immunizing value of the BCG vaccine given by mouth to the new-born, Blechmann and Mély reported a case at the April 3 meeting of the Société médicale des hôpitaux of Paris. Two similar cases had been reported by the authors, one in 1930 and a second in 1935. In this third case an infant who had been given the BCG vaccine at birth died at the age of 4½ months of a tuberculous meningitis. Lumbar puncture had revealed a marked lymphocytosis and the presence of tubercle bacilli, verified by Nègre at the Pasteur Institute as being of the human type. The tuberculin skin reaction on the fourth day after the onset of the meningitis symptoms had been markedly positive.

The infant, after having been given the BCG vaccine by mouth immediately after birth, was isolated for the first six weeks but then allowed to be taken care of by the mother. The latter, it was learned on inquiry, had presented signs of a pulmonary tuberculosis about two years before her marriage and had been treated since that time by repeated artificial pneumothorax insufflations. Believing herself cured, the mother

thought that there was no longer any danger of infecting her infant. Blechmann and Mély emphasize the fact that an artificial pneumothorax for pulmonary tuberculosis does not eliminate the possibility of infecting those who live in close proximity of such a patient.

Paraf stated that absorption of the BCG vaccine, administered by mouth, does not always take place. For this reason some vaccinated nurslings are not immunized at all and others do not absorb more than a few bacilli, a quantity insufficient to give rise to the lesions which should serve as a "premunition" against later tuberculous infection. After subcutaneous and, even more so, after oral administration, the BCG vaccine gives only a relative immunity, which is adequate against mild or moderately active infections but is not constant in its ability to combat a severe contamination by a tuberculous father or mother.

It is difficult to state that an individual is no longer a source of infection, after treatment by artificial pneumothorax, even though from a clinical and radiologic standpoint, the patient appears cured. Paraf had often found that the sputum of such patients still contained tubercle bacilli, so that prolonged isolation is indicated. For this reason, in a monograph entitled "Immunity Against Tuberculosis" the author has raised the question as to whether it is worth while to attempt to vaccinate the new-born with the BCG if exposure to severe infection at home is unavoidable. It would appear to be better to vaccinate only older children and adolescents, not yet allergic, thus conferring an immunity which would enable them to resist the less severe infections to which they might be exposed.

Marfan, continuing the discussion, said that as a rule the skin reactions observed in nurslings given the BCG vaccine were either slight or negative; hence the marked reaction in Blechmann and Mély's case showed that the tuberculous infection was of a highly virulent type. The infant should have been kept away from the mother longer than six weeks. The "premunition" or establishment of immunity after administration of the BCG vaccine requires often several months. Vaccinated nurslings should be isolated for a long period from any contact with tuberculous individuals, especially from a parent who has an artificial pneumothorax.

Lesne endorsed Marfan's views and said that nurslings given the BCG vaccine should be kept away from surroundings in which contamination is possible until they are at least 7 months old; otherwise a sense of false security is entertained by the parents.

Lelong stated that at present no test existed which enabled one to state that an infant is immune. The cutaneous reaction and intradermoreaction indicate the presence of infection and not immunity.

#### **Tuberculous (Bovine Type) Meningitis in Infant Vaccinated with BCG**

The question as to whether the oral administration of the BCG vaccine is able to immunize nurslings against tuberculosis has been actively and at times acrimoniously debated here during the last two years. Mention has been made of the appointment of a committee by the Pasteur Institute of Paris to hear arguments from both sides. The report of this committee has not yet been published. At the March 27 meeting of the Société médicale des hôpitaux of Paris, two pediatricians of Strasbourg, Rohmer and Vallette, reported the case of an infant born May 16, 1934, which was given the BCG vaccine by mouth without any apparent ill effects. The child had never been nursed by the mother. A revaccination was carried out at the age of 13 months, the infant appearing at that time in excellent condition. During the following two months, symptoms of a mild intestinal nature appeared, accompanied on one occasion by emesis. A short period of slight

elevation of temperature was observed about the end of August, and three weeks later the infant appeared to be somnolent, vomited occasionally and suffered from constipation. Examination, September 18, revealed neck rigidity, a positive Kernig sign and apathy. Stains of the fluid obtained by lumbar puncture showed the presence of tubercle bacilli. Guinea-pig inoculation with the cerebrospinal fluid resulted in the discovery of a generalized tuberculosis. The child died September 21, and the necropsy revealed a caseous tuberculosis of the ileum, enlarged mesenteric lymph nodes, a few tubercles in the liver and spleen, and a tuberculous meningo-encephalitis. Pus from the mesenteric nodes was found to contain tubercle bacilli. Some of the pus was inoculated into guinea-pigs. When the latter were killed, lymph nodes containing pus were encountered. This pus studied simultaneously at the bacteriologic laboratory of the University of Strasbourg and at the Pasteur Institute of Paris showed, on inoculation into rabbits, a pure culture of the bovine type of tubercle bacilli. Evidently the atrium of infection in the infant was in the intestine.

The question arises as to the date of the primary infection. The authors quote Wallgren as showing that a tuberculous meningitis, as a general rule, occurs from two to four months after the primary infection; hence Rohmer and Vallette believe that such a primary infection occurred at the time of revaccination (June 15), the symptoms of the meningitis appearing about two months later. Both parents had a history of old, apparently healed tuberculous infection but none of recent character, so this source could be excluded, especially in view of the bovine type of bacilli having been found in the pus of the mesenteric lymph nodes of the infant. Examination of both parents recently also failed to show any tuberculous foci. A source of infection, so far as food was concerned, could also be excluded, according to Rohmer and Vallette. A puzzling feature was the fact that, as verified by Professor Guérin of the Pasteur Institute, Paris, 449 infants had been vaccinated or revaccinated with the same vaccine and that four guinea-pigs inoculated with the vaccine were in perfect condition 213 days later. In the discussion, Guérin said that infants were more frequently infected with tubercle bacilli of the bovine type than is commonly thought, the incidence being at least 10 per cent in France and much higher in the United States and Scandinavian countries, wherefore the instruction to parents never to give an infant unsterilized cow's milk. Guérin believed that the possibility of an infection (with the bovine type) of the parents of this child could not be discarded. The BCG vaccine is of bovine origin, of a strain which originally was very virulent, but during a period of thirteen years, by successive cultures repeated every fifteen days, a stable innocuous strain had been obtained. Even though the milk had been sterilized by the parents of the infant (in Rohmer's case) one could not exclude as a source of infection the cream and butter ingested by the infant.

Weill-Hallé stated that he had employed the same vaccine as was used in Rohmer's case, without observing any accidents.

Tixier questioned the efficacy of the BCG vaccine.

Lesne and Saenz found the bovine type in the cerebrospinal fluid of only seven of 115 cases of tuberculous meningitis.

Marfan believed it unwise to condemn the BCG vaccine from an isolated case such as that reported by Rohmer. The infant had evidently not been immunized, possibly because of nonabsorption of the vaccine. A positive skin reaction in vaccinated infants enables one to determine whether or not the vaccination has been successful.

#### **Two Cases of Bacillus of Pfeiffer Septicemia**

Lemierre, Meyer and Laplane reported two cases of septicemia caused by the bacillus of Pfeiffer, March 13, before the Société médicale des hôpitaux of Paris. Blood cultures yielding the bacillus of Pfeiffer have thus far been reported only



during the course of an influenza epidemic accompanied by severe lung complications or in certain bronchopneumonias, measles or pertussis. Lemierre and his associates reported the case of a woman, aged 22, who was taken ill with symptoms of a severe pharyngitis in August 1935, accompanied by high temperatures, chills, fetid breath and the presence of false membranes of a gangrenous aspect. Following an apparent recovery the chills and fever recurred about three months later, with marked joint symptoms. In the middle of October, signs of pulmonary involvement appeared. When first seen by Lemierre at about this period, the patient presented all the general symptoms of a severe septicemia, with some evidences of localization in the right lung and a systolic murmur. Blood cultures at the end of October were positive for the bacillus of Pfeiffer. The patient died about two weeks later but necropsy could not be obtained. The atrium for the endocarditis and generalized infection had evidently been the pharynx. The appearance of the symptoms of septicemia, eleven days after apparent recovery from the pharyngitis, is not an unusual observation. The interesting feature is the absence of the signs of influenzal character at the onset.

The second case was that of a woman, aged 44, who had a severe tonsillitis with sudden symptoms of edema of the glottis, Oct. 22, 1934. Three blood cultures on the third, sixth and eleventh days after admission to Professor Lemierre's service were all positive for the bacillus of Pfeiffer. The pharyngeal symptoms were accompanied by relatively high fever, evidence of multiple joint localization, signs of bilateral pulmonary congestion, anemia, restlessness and emaciation.

Two later blood cultures were negative despite the persistence of the fever. In the second case the atrium had also been in the pharynx but the clinical evidences of a generalized infection appeared almost immediately. An interesting feature of the onset was the presence of such marked edema of the pharynx and larynx that one could suspect, on examination of these structures, an infection due to the bacillus of Pfeiffer. Two similar recent observations were found in the literature, in which the onset of symptoms was marked by the presence of an intense laryngeal dyspnea, so that a diphtheria was at first suspected.

## BERLIN

(From Our Regular Correspondent)

April 25, 1936.

### The Biologic Effect of Alcohol on Metabolism

The Berlin physiologist Bickel investigated the influence of blood sugar content on the course of the alimentary-alcoholic curve. Experiments performed on rabbits having normal metabolism demonstrated a dependence of the alcohol content of the blood on the sugar content, since a rich sugar content seems to protect the alcohol from oxidation. The alcohol curve consequently sinks more slowly after ingestion of alcohol and sugar than if alcohol alone has been supplied. From comparative experimentation with insulin it was determined that in subjects with normal blood sugar content the sugar and alcohol curve declined more rapidly subsequent to ingestion of alcohol, and simultaneously a decrease in the blood alcohol took place. If, however, in the same insulin experiment, a substantial quantity of sugar was supplied, the decrease in the alcohol content was no longer evident. The further significant observation was made that the intoxication of the subjects was abbreviated by administration of insulin but was substantially increased if a high blood sugar content was present at the same time. On the other hand, defective utilization of alcohol by diabetic subjects is traceable to the insulin deficiency. In explaining how the insulin effects an abbreviation of the toxic state, Bickel declares it demonstrable that a virtual "blockade produced by

insulin" among the ganglion cells opposes the ingested alcohol. The high sugar content appears to retard the entrance of further amounts of alcohol into the tissues.

Of forensic importance is the finding that no quantitative relationship exists between the high level of blood alcohol content and the low level of the intoxication. Individual sensitivity to alcohol must be viewed in the same manner as sensitivities to other agents (tobacco or coffee for example). The value of blood alcohol determined subsequent to an automobile accident, for example, is not alone to be regarded as a satisfactory criterion of drunkenness.

During the discussion of this topic by the Berlin Medical Society, Dr. Wagner, the medical examiner, declared that the utmost caution should govern the interpretation of the blood alcohol content in accident cases. Only values in excess of 2 per thousand can be construed as certain indications of genuine intoxication. Occasionally the curve of alcoholic content in the tolerance test may be an additional important aid. Professor Heubner, pharmacologist, stressed the importance of the type of alcoholic beverage ingested, since the toxic effect may be modified by diverse additional ingredients.

### Physical Examinations for Army Service

Universal compulsory military service became reinstated by law in the German reich, March 16, 1935. This necessitated hasty preparations for the examination of the army class immediately scheduled for service and the establishment of a statistical working basis that would facilitate the examination of future classes. The plan, as pointed out by Dr. Müller of the war ministry, was to examine for immediate military service (wehrdienst) all men born in 1914 and to examine all men born in 1915 for the work service (arbeitsdienst), which precedes regular military duty. In addition, 100,000 volunteers were to be inspected. Records of similar service examinations in prewar times, the last of which took place in 1913, provide a certain basis for comparison. The physicians conducting the 1935 examinations, "impressed by the eagerness of the youth to enlist," appear in several instances to have been more lenient in their decisions than the examiners of prewar days.

The principal observations of the 1935 examinations are given in table I.

Comparison of the 1935 figures with the figures for 1913 gives the results shown in table 2.

Thus, according to these statistics, 83 per cent of those examined were declared fit for active service in 1935 against 76 per cent in 1913. The figures, however, must not be taken to

TABLE 1.—Results of Examinations for War Service in 1935

	Percentage of Conscripts	Percentage of Volunteers	Percentage of Both Groups
Fit for service.....	75.91	86.77	77.02
Fit on condition.....	6.23	4.21	6.03
Total .....	82.14	90.98	83.05
Unfit for service:			
Temporarily unfit .....	6.18	3.65	5.92
Fit for limited service..	8.47	4.72	8.08
Unfit for military service (wehrdienst) .....	2.04	0.53	1.89
Completely unfit .....	1.17	0.07	1.06
Totals .....	17.86	8.97	16.95

represent any such actual difference in the physical condition of recruits, since the present method of classification differs from the method in use before the war. The examination of recruits in large numbers always provides an excellent opportunity to gain an insight into the physical condition of the nation as a whole. With this in mind the examiners of 1935 took into account in addition to those physical and mental

defects which are deemed important from a military point of view all noteworthy defects and infirmities that could be established by examination. The following figures for 1935 show the percentages of those examined presenting various categories of disease: general debility 7.02, circulatory diseases 7.58, defects of the limbs 19.02, diseases of the ear 3.76, defective ocular refraction 11.31, varices and sequels 5.98, partial or complete flatfoot 23.91, nervous diseases 2.43, crippled and deformed conditions of the vertebral column 16.97, bad teeth 14.86, additional diseases of the eye including blindness 3.05, respiratory diseases 1.51, abdominal hernias 4.86, skin diseases and cicatrices 12.25, chronic bone disease 2.19, chronic digestive disorders 4.77, diseases of the genito-urinary organs 1.57, goiter 4.99, stuttering and mutism 0.75, diseases of the nose, tongue

TABLE 2—Comparison of 1935 Figures with Those of 1913

	1913 Percentage	1935 Percentage
Fit	63.6	77.07
Fit on condition	12.4	6.03
Fit for limited service	18.9	8.08
Unfit for military service (wehrdienst)	5.0	1.89
Completely unfit		1.06
Temporarily unfit		5.92

and palate 3.59, general diseases (rheumatism and gout, for example) 0.89, obesity 0.12.

It will be seen that pedal defects occupy first place. The number of men with defective ocular refraction also appears excessively high.

#### Prof. Joseph Jadassohn Dead

The dermatologist Prof. Joseph Jadassohn died March 25 in his seventy-third year at Zurich, where he had been living in retirement. A pupil of the dermatologist Neisser, Jadassohn at an early age was appointed director of the University dermatologic clinic at Bern, Switzerland. While occupying this post he led the exceedingly active life of a successful scientist and practitioner. He remained at Bern from 1896 to 1917 and then came to Breslau in his home province as ordinarius. Thereafter, although enticing offers beckoned to him from other regions, he remained loyal to his Silesia. In 1931 he retired. The foregoing are but a few of the important dates in the chronology of a busy and fruitful life. Few representatives of his field of specialization have exercised a direct influence on the development of the dermatologic anschauung comparable to that of Jadassohn. With great modesty he toiled constantly for what seemed to him the important thing. One of Jadassohn's most illustrious pupils, the late Professor Bloch, once paid his master an appropriate tribute. "Jadassohn," he said, "is one of those rare persons who, in their scientific publications, actually never make a mistake." Everything Jadassohn wrote bears evidences of having been precisely weighed, maturely considered and thoroughly elaborated. Thanks to his brilliant powers of observation and his stupendous memory, Jadassohn was able to unite the ideology and trends of the Viennese and French schools and those of the aspiring German dermatologists in a happy synthesis. For nearly four decades he directed the work of the German Dermatologic Society and he knew how to make the international conventions of skin specialists interesting gatherings. He acted as German representative on the Committee on Hygiene of the League of Nations. His work principally concerned eczema, skin diseases due to fungi, dermal tuberculosis, leprosy and the venereal diseases. Jadassohn was also known for the publication of the *Manual of Dermal and Venereal Diseases*.

In recent years he had written a textbook of dermatology which to date has not appeared in print, since, after the political upheaval in Germany, Jadassohn was unable to find a pub-

lisher. Departing from professional tradition, the German medical publications have either omitted obituaries of this celebrated research scholar and clinician or have accorded him only a few lines.

#### VIENNA

(From Our Regular Correspondent)

April 27, 1936

#### Freedom of Choice of Physician and Sickness Insurance

With the beginning of the new year the so-called Cooperative Union of Employees' Sick Insurance Societies took up its duties. The new social insurance law stipulates that this corporation shall provide for the three groups of employees' insurance organizations included within it (the commercial, industrial and the financial) the following types of joint service: (1) medical attention, obstetric assistance, dental (including mechanical dental) care, furnishing of therapeutic substances and appliances, (2) arrangement for treatment and nursing in various institutions, (3) settlement of accounts with such institutions as well as with physicians, apothecaries and dispensers of medicaments and appliances, and (4) general supervision of the sick. It will be seen that the Cooperative Union has assumed heavy responsibilities, not one of which is more important than the assurance of medical attention. To facilitate the functioning of this service and place the care of the insured on a firmer basis, provisional agreements were arrived at between the union and the organized medical profession. Payments according to individual professional services were decided on and the lump payment system forthwith abolished. The total cost of physicians' services must now be held to a certain percentage of the total receipts of the three societies. This new arrangement carries with it an advantage to the insured; he may now choose his personal physician from among 258 general practitioners and 114 specialists. The old postulate of "free selection of one's physician" has thus been in great measure realized. An insured person who changes his insurance organization or his position may now retain his *vertrauensarzt* (supervisory medical consultant). Dental needs are the responsibility of the two classes of dentists—practitioners and mechanical dentists. Members of the societies may receive the services of ninety-two of these dentists free of charge. Nominal fees, however, are charged by 244 dentists for the performance of specific work. This new "choose your doctor" system also applies to members of the family of the insured. The patient pays a certain amount to his physician, who then receives the balance directly from the insurance society. Of particular advantage to the doctors are the considerable accumulations of insurance funds now available for every few physicians. From these treasuries the individual doctor receives compensation commensurate with his capabilities. It is now possible for a greater number of physicians to profit from the insurance practice than under the previous lump payment or uniform profits system, which subjected members of the medical profession to something of an economic strain.

At the same time, new regulations were made for the Cooperative Union of Workers' Sick Insurance Societies. The arrangements differ widely from those obtaining in the employees' union. Since the several classes of insured workers pay their premiums into the fund at a lower per capita rate, the number of active physicians cannot be so great or the remuneration so ample as in the employees' insurance. A localizing plan was worked out whereby the exact number of physicians available to the insured workers of each district was determined. Unfortunately, a section of the medical profession under this plan is unable to obtain any insurance patients. It is hoped that in future the work may be so distributed that one physician may confine his activities to

one type of insurance, be it workers', employees', state or municipal. This plan is intended to assure each physician of an income, modest though it may be. Physicians' fees in the workers' insurance have, as in the employees' insurance, been made to conform to a fixed percentage of the corresponding contribution paid in by the insured. According to ordinary calculations some 25 to 30 per cent of the societies' gross income is set aside for the payment of physicians. This means that the doctor receives for single professional services something like 1.20 schillings (25 cents) in the workers' insurance and about 1.60 schillings (32 cents) in the employees' insurance. Specialists receive about double the foregoing amounts. To bring about cooperation between the medical profession and the cooperative union, a "medical commission" has been organized, the membership of which is composed 50 per cent of physicians and 50 per cent of representatives of insurance organizations. Each year the honorarium scale will be computed anew and made to conform to the cash balance at the societies' disposal. Such a system renders the physicians' income rather precarious. The medical commission, in addition to its control of the distribution of physicians' assignments, exercises a much needed power to curtail disbursements for medicaments, cash benefits and hospital care, since such expenditures must come out of that 30 per cent of the gross income set aside for the compensation of physicians. The question of outpatients, heretofore an annoyance to the paid specialist practice, has also been settled. Dental outpatients, together with eye, ear, nose and throat outpatients, are now free to receive treatment from the doctor of their choice and this enables the specialist to carry on an independent practice with steady if modest returns. Since the members of an insured family now are to receive more benefits (this involves some 75,000 persons) a proportionately greater number of physicians will now be called on to serve. These regulations are not to be considered as permanent but as attempts to evolve a system that works. It will require one or two years' time before a condition satisfactory to all can be brought about. Meanwhile one thing is already certain: the incomes of individual physicians will, on the whole, decline and many doctors will find only scant opportunity to carry on private practice. It is hoped that political and religious factors will not exert too great an influence on the operation of the "localizing plan for physicians."

#### Death of Professor Bárány

The renowned otologist Prof. Dr. Robert Bárány, first Austrian to obtain the Nobel Prize for Medicine (in 1914), died in Uppsala, Sweden, his second home, a few days short of his sixtieth birthday. Born at Vienna, Bárány began his studies there and took the degree of Universal Doctor of Medicine (M.D.). He studied at Frankfurt and at Freiburg, and in 1903 returned to Vienna, becoming active first in the surgical clinic and later in the ear clinic of Professor Politzer, then a Mekka for otologists. As early as 1906, Bárány became known to the medical world through the published results of his investigations on nystagmus caused by labyrinthine disturbance in ear disease among normal-hearing persons and in deaf mutism. Not long after he made the discovery of caloric nystagmus and invented the "caloric test," which came to be one of the most important methods of otologic examination. This test together with others discovered by him (Bárány's past-pointing test, Bárány's symptom complex), developed into a whole series of fundamental aids in the localization of cerebral and cerebellar tumors and abscesses as well as of vestibular disturbances. Bárány, more than any other, contributed to our knowledge of the physiology of the semicircular canals. His discoveries, however, were not appreciated in Vienna at the time and he even had to contend with opposition. So, when invited by the University of Uppsala to assume charge of the ear clinic there, he gladly accepted. At

the beginning of the World War he was taken prisoner on the eastern front and it was during his captivity that he was declared a winner of the Nobel Prize for Medicine. The Russians had the generosity (the more striking in view of Bárány's Jewish origin) to allow the eminent scientist immediate freedom so that he might receive the award in person at Stockholm. The honor thus bestowed served to strengthen the ties that bound him to Sweden. In 1917 he became director of the Uppsala clinic. Although in 1909 he had become a docent in Vienna, he first attained professorial rank at Uppsala. Vienna obviously had not considered him worthy of a professorship. In addition to numerous treatises on the labyrinth, written from the standpoints of the physiologist, the surgeon and the sociologist, Bárány was also active as a pacifist and philanthropist. He never allowed his affection for Vienna to wane. This was demonstrated when, thanks to his efforts, the distress among the Viennese physicians after the war was materially alleviated. The Austrian Otologic Society in its most recent session, which took the form of a Bárány memorial meeting, evinced a just appreciation of this man's contributions to medical science.

#### JAPAN

(From Our Regular Correspondent)

April 15, 1936.

#### Mortality in Tokyo

According to the report of the Metropolitan Police Board, the deaths within its jurisdiction (excluding only the islands), have been as follows:

Year	Population	Deaths	Rate per 10,000
1931.....	5,461,628	88,237	161.56
1932.....	5,735,886	80,956	141.14
1933.....	5,877,377	89,370	152.06
1934.....	6,070,880	87,269	143.75
1935.....	6,287,030	85,230	135.56

On an average, from 222 to 247 deaths occur every day, but the general tendency is to decrease in number. In 1936 the deaths included 45,509 males and 39,721 females. The number of deaths of children under 5 years of age was 27,965 (32.51 per cent). The death rate is high in winter and spring, being highest in January; next comes February, December, March and April. Tuberculosis of the lungs was first with 9,876; other tuberculous cases numbered 3,340, a total of 15.50 per cent. Next come 8,121 deaths from pneumonia (9.53 per cent), then 7,922 cases of cerebral hemorrhage. There were 3,688 deaths from cancer, 3,377 from circulatory disorders and 3,048 from kidney diseases. Suicides by means of poison number 538 and by hanging 300. These numbers included 561 men and 342 women.

#### Stray Dogs and Rabies

The authorities have decided to prevent rabies. The hunting of homeless dogs has been loudly censured because of its cruelty, but it had to be done to prevent rabies. Since last year the police tried to castrate homeless male dogs instead of killing them. The Association of Veterinary Surgeons has agreed to aid the police board in the treatment of female dogs. The expense is hereafter to be paid equally by an owner, a surgeon and the board. It is expected that within the year more than 1,000 dogs will be castrated. It is estimated that there are over 50,000 dogs in Tokyo.

#### School Nurses

A remarkable improvement in school hygiene is indicated by an increase of school nurses and school dentists attached to various kinds of schools. This system has been established recently. Of 127 cities, 109 have school nurses in their schools. Formerly it was considered impossible for school teachers to practice the school hygienic laws, because of lack of medical knowledge. In 1934 there were 3,092 nurses throughout the country, an increase of 694 nurses compared with the previous

year. Of these, 806 are graduates from girls' high schools, 2,764 are licensed nurses and 104 are school teachers. The urgent demand for them required the establishment of training institutes with comparatively short training courses lasting for a year here and half a year there and some courses for three months. The course is divided into school hygienics, nursing, bandage dressing, first aid treatment, disinfection, pharmacy, medical instruments, bacteriology, parasitology, dietetics, dentistry, ophthalmology and school hygienic laws. The Education Office is going to organize a central organ to develop school nursing.

#### The Smoke Nuisance

The cloud of black smoke that shoots into the air night and day from 8,924 chimneys in Tokyo has long been a matter of investigation. A regulation controlling the density of smoke is soon to be issued. Last year the cases exceeding the density limit amounted to 1,560, a decrease of 330 cases as compared with other years on an average.

#### Memorial Service to Professor Mendel

Memorial services for the late Prof. Lafayette Benedict Mendel were held in the hall of the Dietetic Laboratory in Tokyo March 24 with Dr. Saeki, the chief of the institute, in the chair. After the opening address by the chairman, Prof. Shigenobu Kuriyama of the Tokyo Imperial University paid an eloquent tribute, recalling his first visit to Yale University in 1916, where he studied under Professor Mendel for a year and a half. He said that his English was poor, which was the cause of much inconvenience, but that Professor Mendel treated him with great consideration. He showed some photographs taken in New Haven. Dr. Takeo Inoue of St. Luke's Hospital, who was under his guidance in 1922, highly admired the noble character of Dr. Mendel. After an address by Dr. Koichi Sugimoto of the laboratory, Dr. Saeki spoke impressively. He recalled that he saw Dr. Mendel for the first time in 1905 at Yale University and that he was the oldest of Mendel's followers living here. He praised Mendel's love for his mother, whom he used to go back home to visit whenever he had any time to spare. He said that he had three ambitions: to write the best book on nutrition, to invite Dr. Mendel to Japan, and to devote his life to science. He greatly regretted that he had failed to accomplish the second. Last of all, as a friend of the deceased, Dr. Kanichi Miyajima delivered the closing address. As Dr. Mendel has so many prominent medical scholars in Japan as his followers, his death is still much lamented here.

#### Death of Prof. Dr. Okajima

Prof. Dr. Keiji Okajima, founder of the anatomy department of the Keio Medical University, Tokyo, suddenly died of apoplexy, April 9, aged 55. He graduated from the Kanazawa Medical College in 1902 and served in the Russo-Japanese War as an army surgeon. After the war he was appointed an assistant in the Tokyo Imperial University and then went to the Kyoto Imperial University and the Nagasaki Medical College as professor of anatomy. When the Keio Medical College was opened he was invited to be chief of its anatomic department. During those thirty years of professorship he devoted his life wholly to the work of anatomy. "The Japanese Anatomy" won fame, for it was entirely written by himself. His later years were given to completing "The Japanese Literature on Anatomy," but his sudden death left it half done. He also painted in oil. According to his will, his bones will be kept in the anatomic department as a specimen.

#### Death of Prof. Dr. Takahashi

Dr. Gonzaburo Takahashi of the Manchurian Railway Hospital died, April 9, in the hospital at Shinking. He was famous for his discovery in 1933 of the cause of Manchurian typhoid, but he was a victim of this disease.

## Marriages

JAMES HAROLD FORRESTER to Miss Jane Eleanor Parker, both of Belleville, Ont., Canada, in New York, May 16.

ROYALE H. FOWLER, Glen Ridge, N. J., to Miss Lillie Marshall Fowler of Montclair, May 9.

JAMES CARR EAGLE, Spencer, N. C., to Miss Sadie M. Ellenburg of Salisbury, May 16.

LEE O. GREENE, Pea Ridge, Ark., to Miss Emma Howard of Cassville, Mo., recently.

ELMER CHARLES KOCOVSKY to Miss Frances Schopen, both of Milwaukee, April 25.

## Deaths

**Edgar Holden Jr.** ♂ Newark, N. J.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1899; member of the American Academy of Orthopedic Surgeons; fellow of the American College of Surgeons; attending orthopedic surgeon to the Newark City, Newark Memorial and Babies' hospitals, and Hospital for Crippled Children; adjunct, St. James and Beth Israel hospitals; consulting orthopedic surgeon to the Hospital of St. Barnabas, Presbyterian Hospital, Hospital for Women and Children, Newark Eye and Ear Infirmary, Newark, Essex County Hospital, Belleville, Mountainside Hospital, Montclair, Muhlenberg Hospital, Plainfield, Irvington (N. J.) General Hospital, Hospital and Home for Incurables, Parental Home and Juvenile Court, Newark Board of Education and the crippled schools, and the Veterans' Administration Facility, Lyons; aged 62; died, April 30, of carcinoma of the lung.

**Augustus Washington Knox**, Raleigh, N. C.; Bellevue Hospital Medical College, New York, 1874; member of the Medical Society of the State of North Carolina; fellow of the American College of Surgeons; at one time professor of surgery, Leonard Medical School and the University of North Carolina School of Medicine; visiting surgeon to the Leonard and St. Agnes hospitals and consulting surgeon to the Rex Hospital and Norfolk-Southern Railroad; aged 87; died, May 9.

**Dwight Wallace Tracy**, West Hartford, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1908; member of the Connecticut State Medical Society; for eleven years medical inspector of the city board of health; for many years on the staffs of the Hartford and Hartford Municipal hospitals, Litchfield County Hospital, Winsted, Middlesex Hospital, Middletown, and the Charlotte Hungerford Hospital, Torrington; aged 52; died, March 22, of arteriosclerosis.

**Theodore William Schaefer**, Kansas City, Mo.; University of Maryland School of Medicine, Baltimore, 1880; professor of analytical chemistry at the University Medical College, Kansas City, 1896-1900, during which time he also taught Latin in the Woman's Medical College, Kansas City; professor of analytical chemistry in the Kansas City Veterinary College, 1900-1906; aged 76; died, March 8, of pneumonia.

**Foster Matthew Johns** ♂ New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1912; assistant professor of clinical medicine at his alma mater; president of the American Society of Clinical Pathologists; vice president of the Orleans Parish Medical Society; co-author of "Practical Clinical Laboratory Diagnosis"; aged 46; died, April 30, of cerebral hemorrhage.

**Frank Clarendon Cook** ♂ Medical Director, Captain, U. S. Navy, retired, Philadelphia; Harvard University Medical School, Boston, 1893; entered the navy in 1894 and retired in 1933 on attaining age of 64 years; served during the Spanish-American and World wars; aged 66; died, April 20, in the United States Naval Hospital, of intestinal obstruction and chronic myocarditis.

**Benjamin Brittain Simms**, Talladega, Ala.; Jefferson Medical College of Philadelphia, 1885; member, past president and secretary of the Medical Association of the State of Alabama; past president of the Talladega County Medical Society; at one time county health officer and member of the city council; formerly on the staff of the Citizens' Hospital; aged 76; died, March 25, of uremia.

**James Monroe Austin**, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1930; member of the South Carolina Medical Association and the American Psy-

chiatric Association; served during the World War; on the staff of the South Carolina State Hospital; aged 38; died, April 24, of arterial hypertension and chronic nephritis.

**John Samuel Maeder**, New York; New York Homeopathic Medical College and Flower Hospital, New York, 1908; assistant professor of urology at his alma mater; served during the World War; on the staffs of the Metropolitan and Fifth Avenue and Flower hospitals; aged 54; died, April 14, in Mount Vernon, N. Y., of chronic endocarditis and tonsillitis.

**John Joseph Bona**, Chicago; Chicago College of Medicine and Surgery, 1915; member of the Illinois State Medical Society; fellow of the American College of Surgeons; clinical instructor in surgery, Loyola University School of Medicine; aged 43; on the staff of the Hospital of St. Anthony de Padua, where he died, April 25, of pneumonia.

**Read McLane Ellsworth**, Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1924; member of the American Society for Clinical Investigation; associate in medicine at his alma mater; assistant physician on the medical staff of the Johns Hopkins Hospital and Dispensary; aged 37; died, April 28, of pulmonary tuberculosis.

**John Henry Seiler**, Akron, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1886; past president of the Summit County Medical Society; formerly member of the board of education; for many years on the staff of the City Hospital; aged 78; died, March 31, in Southern Pines, N. C., of arteriosclerosis.

**George August Hopp**, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1910; member of the Medical Society of the State of Pennsylvania; formerly associate professor of pathology at his alma mater; member of the American Society of Clinical Pathologists; aged 53; died, April 27, of myocarditis.

**Thomas Jackson Russell**, Somerville, Ala.; University of Alabama Medical Department, Mobile, 1904; member of the Medical Association of the State of Alabama; past president of the Morgan County Medical Society; formerly member of the county board of health; aged 65; died, March 26, of chronic nephritis and uremia.

**Jacob D. Updegrove**, Phillipsburg, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; at one time lecturer of hygiene and director of physical training, Lafayette College, Easton, Pa.; aged 73; died, March 22, of arteriosclerosis.

**Thomas Francis Mullen**, Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1908; member of the Michigan State Medical Society; fellow of the American College of Surgeons; aged 52; junior orthopedic surgeon, outpatient department, Harper Hospital, where he died, April 13.

**Harold James Connor**, Concord, N. H.; Tufts College Medical School, Boston, 1913; member of the New England Roentgen Ray Society; served during the World War; on the staffs of the Margaret Pillsbury and New Hampshire Memorial hospitals; aged 45; died, April 8, of cerebral hemorrhage and nephrosis.

**Horace Westlake Frink**, Chapel Hill, N. C.; Cornell University Medical College, New York, 1905; member of the American Psychoanalytical Association; formerly assistant professor of clinical medicine at his alma mater; aged 53; died, April 18, in the Pine Bluff (N. C.) Sanitarium, of heart disease.

**James Abram Womack**, Equality, Ill.; University of Tennessee Medical Department, Nashville, 1884; member of the Medical Association of the State of Alabama; past president of the Gallatin County Medical Society; formerly state senator; aged 75; died, March 30, of carcinoma of the prostate.

**James Albert Williams**, Belle Plaine, Iowa; Bennett College of Eclectic Medicine and Surgery, Chicago, 1895; member of the Iowa State Medical Society; formerly member of the city council and board of education; aged 70; died, March 26, in the University Hospital, Iowa City, of pneumonia.

**John Chauncey Van Nuys**, Lufkin, Texas; Rush Medical College, Chicago, 1897; member of the State Medical Association of Texas; formerly president and secretary of the Angelina County Medical Society; on the staff of the Angelina County Hospital; aged 67; died, March 12, of pneumonia.

**Wilgus Bach**, Jackson, Ky.; University of Louisville Medical Department, 1910; fellow of the American College of Surgeons; past president of the Breathitt County Medical Society; owner and medical director of a hospital bearing his name; aged 49; died, April 28, of pneumonia.

**Dawson Dwight Van Osdol**, Rushville, Ind.; Miami Medical College, Cincinnati, 1894; member of the Indiana State Medical Association; past president of the Rush County Medical Society; on the staff of the City Hospital; aged 66; died, March 24, of cerebral hemorrhage.

**Thomas Chittenden Hill**, Boston; University of Vermont College of Medicine, Burlington, 1895; fellow of the American College of Surgeons; consultant to the department of rectal diseases, Boston Dispensary; aged 65; died, April 11, in Vero Beach, Fla., of heart disease.

**Frank Bradbury Hollenbeck**, Lincoln, Neb.; Rush Medical College, Chicago, 1898; fellow of the American College of Surgeons; past president of the Lancaster County Medical Society; surgeon to St. Elizabeth's Hospital; aged 67; died, April 12, of coronary thrombosis.

**Robert Harrison Jeffrey**, Uniontown, Pa.; Jefferson Medical College of Philadelphia, 1912; served during the World War; fellow of the American College of Surgeons; aged 47; on the staff of the Uniontown Hospital, where he died, April 23, of subarachnoid hemorrhage.

**Walter Clifford Chidester**, San Mateo, Calif.; Medical College of Ohio, Cincinnati, 1896; member of the Pacific Coast Surgical Association; fellow of the American College of Surgeons; aged 60; medical director of the Mills Memorial Hospital, where he died, April 21.

**Robert Borden Smiley**, Tripoli, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; served during the World War; aged 58; died, March 28, in the Wisconsin General Hospital, Madison, of coronary sclerosis.

**Edward W. Steeves**, Brownsville, Pa.; College of Physicians and Surgeons, Baltimore, 1898; member of the Medical Society of the State of Pennsylvania; on the staff of the Brownsville General Hospital; aged 68; died, March 24, of angina pectoris.

**James Meriweather Hull**, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1879; member of the Medical Association of Georgia; professor emeritus of clinical ophthalmology and otolaryngology at his alma mater; aged 77; died, April 13.

**Jacob A. Walter**, Punxsutawney, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1887; formerly on the staff of the Adrian Hospital; aged 76; died, March 30, in the Hahnemann Hospital, Philadelphia, of carcinoma of the stomach.

**John Franklin Snyder**, Pittsburgh; University of Pittsburgh School of Medicine, 1931; assistant resident physician to the Municipal Hospital for Contagious Diseases; aged 29; died, March 22, of general peritonitis and cerebral hemorrhage.

**Fred William Robinson**, Sturgis, Mich.; Detroit College of Medicine, 1893; member of the Michigan State Medical Society; aged 68; formerly on the staff of the Sturgis Memorial Hospital, where he died, March 20, of carcinoma of the prostate.

**James Robert Tyner**, Murfreesboro, Tenn.; Washington University School of Medicine, St. Louis, 1934; member of the Medical Association of Georgia; resident physician at the Rutherford Hospital; aged 29; died, March 10, of scarlet fever.

**Daniel John Townsend**, Lohrville, Iowa; Drake University Medical Department, Des Moines, 1887; member of the Iowa State Medical Society; formerly member of the state legislature; aged 80; died, March 27, of heart disease.

**Baylis Frank Sloan**, Walhalla, S. C.; Medical College of the State of South Carolina, Charleston, 1900; member of the South Carolina Medical Association; served during the World War; aged 57; died, March 23, of coronary occlusion.

**William Shaftner Yates**, Junction City, Kan.; Kansas City (Mo.) Medical College, 1893; county health officer; formerly on the staff of the Junction City Municipal Hospital; aged 71; died, March 29, of carcinoma of the larynx.

**Grover Cleveland Davis**, Pelahatchee, Miss.; Memphis (Tenn.) Hospital Medical College, 1912; served during the World War; aged 47; died, March 19, in a hospital at Memphis, Tenn., of pellagra and tuberculosis of the lungs.

**Frank M. Wiley**, Fredonia, Kan.; Starling Medical College, Columbus, 1877; past president of the Wilson County Medical Society; for many years county coroner; aged 80; died, March 12, of cerebral arteriosclerosis.

**William Beatty Lunn**, Marquette, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; on the staffs of St. Luke's and St. Mary's hospitals; aged 63; died, March 28, of heart disease.

**Josiah Lane Sanborn**, Bayonne, N. J.; University of the City of New York Medical Department, 1885; on the staff of the Bayonne Hospital and Dispensary; aged 72; died, March 27, of diabetes mellitus and influenza.

**Robinson Herman Salmon**, Mertens, Texas; Medical College of Alabama, Mobile, 1893; member of the State Medical Association of Texas; aged 64; died, March 28, in the Boyd Sanitarium, Hillsboro, of pneumonia.

**Guy Addison Smith**, Kansas City, Kan.; Fort Wayne (Ind.) College of Medicine, 1905; member of the Kansas Medical Society; aged 53; died, March 17, in the Bethany Methodist Hospital, of chronic myocarditis.

**George Walters Beane**, McKees Rocks, Pa.; Bellevue Hospital Medical College, New York, 1883; member of the Medical Society of the State of Pennsylvania; aged 74; died, March 5, in Lake Worth, Fla.

**Harris E. Timerman**, Chicago; Rush Medical College, Chicago, 1900; member of the Illinois State Medical Society; on the staff of the Swedish Covenant Hospital; aged 59; hanged himself, March 25.

**Francis Henry Davenport**, Boston; Harvard University Medical School, Boston, 1874; member of the Massachusetts Medical Society; fellow of the American College of Surgeons; aged 84; died, April 9.

**Lawrence Madison Small**, Ionia, Iowa; Marion-Sims College of Medicine, St. Louis, 1897; aged 69; died, March 20, of hemiplegia due to cerebral hemorrhage, arteriosclerosis and bronchopneumonia.

**Edgar F. Taylor**, Clinton, S. C.; Medical College of the State of South Carolina, Charleston, 1876; member of the South Carolina Medical Association; aged 83; died, March 27, of bronchopneumonia.

**Howard Franklin Smith**, Hartford, Conn.; Yale University School of Medicine, New Haven, 1896; formerly police surgeon; aged 63; died, March 23, in the Mount Sinai Hospital, of coronary occlusion.

**James Z. Henry**, Ellenwood, Ga.; Atlanta School of Medicine, 1909; member of the Medical Association of Georgia; aged 53; died, March 20, in the Crawford W. Long Memorial Hospital, Atlanta.

**Rawley Martin Shelton**, Unionville, Va.; University of Virginia Department of Medicine, Charlottesville, 1897; member of the Medical Society of Virginia; aged 65; died, March 15, of pneumonia.

**Clark Abbott Stuart**, Castorland, N. Y.; Baltimore Medical College, 1890; member of the Medical Society of the State of New York; health officer of Castorland; aged 68; died, March 15, of erysipelas.

**William Edward Diller**, New York; University of Virginia Department of Medicine, Charlottesville, 1884; University of the City of New York Medical Department, 1885; aged 77; died, March 23.

**Edwin Oscar Swanson** ♂ St. Paul; University of Minnesota Medical School, Minneapolis, 1917; served during the World War; aged 45; died, March 29, of influenza, encephalitis and pneumonia.

**Casius Clay Surber**, Independence, Kan.; Kansas City (Mo.) Medical College, 1884; for twenty-five years chief of staff of Mercy Hospital; aged 75; died, March 8, of mitral regurgitation.

**Willis Edward Lingle** ♂ Cobden, Ill.; St. Louis College of Physicians and Surgeons, 1894; past president of the Union County Medical Society; aged 63; died, March 27, of coronary thrombosis.

**John Henry Phillips** ♂ Willis, Texas; University of Texas School of Medicine, Galveston, 1913; served during the World War; aged 67; was killed, March 11, by an automobile in Houston.

**Edward Buckminster Stephens**, Plymouth, Mass.; Jefferson Medical College of Philadelphia, 1883; aged 85; died, March 24, in Andover, of chronic myocarditis and senile dementia.

**Edgar Speiden**, Silver Spring, Md.; George Washington University School of Medicine, Washington, D. C., 1905; aged 69; died, March 15, of cerebral hemorrhage and cardiac hypertrophy.

**Charles Clyde Tidd**, Mineral Ridge, Ohio; Western Reserve University Medical Department, Cleveland, 1899; veteran of the Spanish-American War; aged 60; died, March 14.

**Claudius Junius Young**, Washington, D. C.; Howard University College of Medicine, Washington, 1915; aged 55; died, March 21, of incised wounds of neck and wrist, self-inflicted.

**Samuel Herbert Stephens**, Saylesville, R. I. (licensed by Rhode Island State Board of Health under the Act of 1895); aged 78; died, March 28, of arteriosclerosis and myocarditis.

**Harry Lincoln Finley**, Taxila, Punjab, India; Jefferson Medical College of Philadelphia, 1895; aged 71; died, March 12, of pneumonia and malignancy of the prostate.

**John T. Hunter**, Equality, Ala.; Birmingham Medical College, 1901; member of the Medical Association of the State of Alabama; aged 71; died, March 22, in Wetumpka.

**Adeline Goodrich Soule**, Kansas City, Mo.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 82; died, March 29, in a hospital at St. Joseph, of senility.

**Ralph Martin Tidd** ♂ Clark, Pa.; Rush Medical College, Chicago, 1902; president of the Mercer County Medical Society; aged 59; died, March 11, of angina pectoris.

**Smith James Townsend**, Gilmore City, Iowa; Western Reserve University Medical Department, Cleveland, 1892; aged 67; died, March 5, of uremia and pyelitis.

**Felix Jefferson Willey** ♂ Mer Rouge, La.; Vanderbilt University School of Medicine, Nashville, Tenn., 1914; aged 45; died, March 26, in Little Rock, Ark.

**Frank Allison Brown**, Stockton, Mo.; Barnes Medical College, St. Louis, 1903; member of the Missouri State Medical Association; aged 56; died, March 13.

**Joseph Milton Wine**, Dayton, Ohio; Chicago Homeopathic Medical College, 1890; member of the Ohio State Medical Association; aged 70; died, March 20.

**Lina M. Rosat**, Lincoln, Neb.; Homeopathic Medical College of Missouri, St. Louis, 1891; aged 72; died, March 17, of myocarditis and hypostatic pneumonia.

**James Arthur Matthews**, Mathis, Texas; University of Louisiana Medical Department, New Orleans, 1873; aged 89; died, March 14, of coronary occlusion.

**Hudson D. Rice**, Dallas, Texas (registered by Texas State Board of Medical Examiners, under the Act of 1907); also a druggist; aged 80; died, March 25.

**John M. St. Clair**, Indiana, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1875; aged 88; died, March 29, of arteriosclerosis.

**Myles Jasper Slaughter**, Millerville, Ala.; University of Alabama Medical Department, Mobile, 1905; aged 65; died, March 19, of pneumonia.

**Francis Marion Trigg**, Freeport, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1886; aged 75; died, March 13, of erysipelas.

**Thomas Jefferson Randall**, Los Angeles; University Medical College of Kansas City, Mo., 1899; aged 75; died, March 24, of arteriosclerosis.

**James Semple**, Kibbey, Sask., Canada; Trinity Medical College, Toronto, Ont., 1894; aged 67; died suddenly, March 17, of angina pectoris.

**A. Bromley York**, Huntington, W. Va.; University of Cincinnati College of Medicine, 1924; aged 36; died, March 20, of embolism.

**Thomas Coolidge**, Coalinga, Calif.; Barnes Medical College, St. Louis, 1896; aged 74; died, March 24, of coronary thrombosis.

**George Heinrich Braun**, Fort Smith, Ark.; Eclectic Medical College of the City of New York, 1887; aged 73; died, March 12.

**P. L. Collinsworth**, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1897; aged 63; died, March 17.

**Edward Tomlinson** ♂ Orono, Maine; Trinity Medical College, Toronto, Ont., Canada, 1893; aged 66; died, March 24.

**Robert Wilson Claypool**, Mellott, Ind.; Rush Medical College, Chicago, 1881; aged 78; died, March 30.

**John Nelson Stone**, Newark, Ohio; Starling Medical College, Columbus, 1892; aged 67; died, March 17.

**Edward A. Jeffers**, Chuckey, Tenn.; Chattanooga Medical College, 1907; aged 53; died, March 16.

**Byron C. Sorrells**, Mansfield, Ark. (licensed in Arkansas in 1903); aged 70; died, February 24.

**Ransom B. Lynch**, Plato, Mo.; St. Louis Medical College, 1873; aged 90; died, March 8.



## Correspondence

### REVERSIBLE CARDIAC ENLARGEMENT

*To the Editor:*—In his article on reversible cardiac enlargement in *THE JOURNAL*, May 23, Dr. John E. Walker named arteriovenous aneurysm, beriberi and myxedema as the three conditions in which cardiac enlargement may be reduced to normal after specific therapy. To these three I add another. During the past few years we have made extensive studies at the Montefiore Hospital on cardiac enlargement secondary to chronic pulmonary tuberculosis and have observed in several instances the return to normal size, radiographically, of moderately, or greatly enlarged, hearts following the institution of intensive diuretic therapy. In one particular instance a heart which occupied almost the entire chest on x-ray examination was reduced to almost normal size within a month and then went through a similar cycle of enlargement and reduction six months later. Of course, this type of reversible cardiac enlargement is not identical with that described by Dr. Walker because in his cases the reduction in size was accomplished by specific treatment of the etiologic agent, namely, the aneurysm, the beriberi or the myxedema, whereas in our cases treatment was directed only toward the cardiac failure itself and had no bearing on the primary cause of the cardiac enlargement, pulmonary fibrosis secondary to the tuberculous disease. The prognosis in the two types of conditions is entirely different. In Dr. Walker's cases the reduced hearts remain of normal size permanently or as long as the treatment is effective. In the enlarged hearts secondary to pulmonary disease the improvement is only temporary—weeks or months—but eventually the hearts enlarge again and generally speaking the course of illness in these patients is really dependent on the extent and type of the pulmonary disease. In cases of active pulmonary tuberculosis the response to cardiac therapy is insignificant, while in the cases of inactive fibrotic lesions much can be accomplished in the reduction of the cardiac size and the establishment of compensation clinically. The chief point I wish to emphasize, however, is that the cardiac enlargement in pulmonary heart disease, even though extensive, may be reversible with intensive therapy.

MILTON B. ROSENBLATT, M.D., New York.

### "GRANULOCYTOPENIA"

*To the Editor:*—The editorial on "Granulocytopenia, Malignant Neutropenia or Agranulocytosis" published in *THE JOURNAL*, April 25, fails to mention a number of recent articles which have gone far to elucidate some of the mechanisms involved in production of the disease in question.

Most investigators have now accepted the theory first enunciated by Fitz-Hugh and Krumbhaar that the bone marrow of the disease is characterized by a state of "maturation arrest" of the white cells, in which, although the marrow is well stocked with primitive leukocytes ready to mature, the peripheral blood shows depletion of granulocytes. The most complete of recent publications demonstrating this feature is that of R. C. Darling, Frederic Parker Jr. and Henry Jackson Jr. (*Am. J. Path.* 12:1 [Jan.] 1936). These authors point out from study of their large material (mostly biopsies from sternal bone marrow) that the disorder has a rather consistent pathologic picture, which is chiefly characterized by a profusion of young granulocytic cells, the mature cells being conspicuously reduced in number.

What is the mechanism of this "maturation arrest" and why does it occur? Many authors have pointed out that the blood changes may antedate the clinical manifestations of prostration, high fever and mucous membrane necrosis by several days. Sepsis as a factor either general or derived from a local

necrotic process seems therefore very unlikely. As the editorial writer points out, the importance of drugs as etiologic agents has gradually become appreciated in the last few years. Since only a few of the many who have taken aminopyrine or dinitrophenol or arsphenamine develop the disease, the possibility that the disease might be due to an idiosyncrasy, hypersensitivity or allergy to the drug aminopyrine was advanced by several authors. Complete experimental proof of this hypothesis was lacking, however, until publication of an article by William Dameshek and Abraham Colmes (*J. Clin. Investigation* 15:85 [Jan.] 1936). In this study it was shown that in the last series of twelve consecutive patients studied the only consistent etiologic factor was that of a drug, usually aminopyrine, administered either alone or in combination with a sedative. Eight patients of this series recovered and four were intensively studied from the standpoint of a possible allergic reaction to aminopyrine. These four patients when given aminopyrine by mouth in a dosage of from 5 to 50 grains (0.3 to 3.25 Gm.) reacted in varying degrees. One patient, within two and one-half hours after administration of 10 grains (0.6 Gm.) of the drug, developed malaise, pains in all the joints, nausea, and severe headache. In twenty-four hours she had extreme prostration, headache, fever, and a leukocyte count of 1,400, with 28 per cent polymorphonuclear cells. She then developed complete agranulocytosis and finally necrotic lesions of the buccal mucous membranes. After several anxious days, she made a spontaneous recovery.

Scratch tests, patch tests, intradermal tests and passive transfer tests with aminopyrine in all four patients were negative, but striking skin reactions were obtained when intradermal tests were made with a mixture of aminopyrine solution that had been "aged" with human blood serum for several days (controls all negative). This procedure was carried out after the work of F. L. Horsfall Jr. (*J. Immunology* 27:553 [Dec.] 1934) on formaldehyde serum proteins and of Landsteiner on "drug-protein linkage" as a basis for the allergic reaction in certain instances. Not only did these striking skin reactions occur, but two of the patients developed severe hematologic and then clinical agranulocytosis, although the amount of aminopyrine introduced intradermally could not have been greater than 10 mg. (one-sixth grain). Both of these phenomena demonstrated beyond question the great hypersensitivity or idiosyncrasy or allergy of the subjects tested to the drug aminopyrine and suggested a drug-protein linkage as the basis of the "allergic" reaction. That agranulocytosis occurred after intradermal injection of minute quantities of aminopyrine would seem to disprove the contentions of R. R. Kracke and F. P. Parker (*Am. J. Clin. Path.* 4:454 [Nov.] 1934) that "the injection of these drugs, whether it be subcutaneous, intraperitoneal or intravenous, would result in little opportunity for oxidation to the more toxic products, whereas the oral administration of the same drugs . . . would lend them to easy oxidation in the gastro-intestinal tract."

In previous unpublished experiments, Dameshek demonstrated that normal subjects given aminopyrine over a period of from two to four weeks usually developed leukopenia followed by leukocytosis ("release phenomenon") when the drug was discontinued. This suggested that the drug depressed the growth tendency of leukocytes in the bone marrow. Some patients might be so sensitive to the drug that an almost immediate maturation arrest could occur when the drug was given. That this was so was recently nicely demonstrated by Plum (*Ugesk. f. Læger*, 1936, p. 91), who gave aminopyrine by mouth to three patients who had recovered from attacks of agranulocytosis and performed puncture biopsies of the sternal bone marrow both before and after administration of the drug. Coincidentally with the resultant agranulocytosis in the blood, the bone marrow showed large numbers of very immature cells,

only a few mature cells being present. Plum concluded that the leukopenia was the result of a decrease in the production of granulocytes (again "maturation arrest").

The editorial writer states that the mortality is about 92 per cent. This was the mortality rate in 1932 but appears to have become modified considerably since introduction of the nucleic acid derivatives. Of my last twelve patients, all treated with these preparations, nine recovered. In Jackson's large series, about two thirds recovered. Recovery seems to depend on early diagnosis and immediate and massive therapy. In my own hands, greatest success has been obtained with the use of adenine sulfate—a split product of the pentose nucleotides—given intravenously in a dosage of from 1 to 2 Gm. daily or even more frequently.

All will agree, however, that the best treatment for agranulocytosis is prevention. Fortunately the disease seems to be becoming quite rare and this may be due to lessened consumption of aminopyrine both alone and in various sedative combinations. Be that as it may, the whole problem of hypersensitivity, idiosyncrasy or "allergy" to drugs is still a wide open one and will repay much investigation.

WILLIAM DAMESHEK, M.D., Boston.

### HAZARD OF METAL FOIL ON CANDY AND TOBACCO

*To the Editor:*—Your answer to the letter of inquiry from Dr. Charles Stover (*THE JOURNAL*, May 2, p. 1590) regarding the hazards of metal foil on chocolate is timely. Probably the hazard from the use of tobacco packed in foil is quite as great. Recently a bookkeeper, aged 60, consulted me, complaining of self-diagnosed gout. The symptoms and signs were pain in both legs, swelling of the base of the right great toe, and deposits suggesting tophi at the base of the great toe and the second toe. Other symptoms were loss of appetite, extreme nervousness, muscle twitching and mild weakness. According to Peters and Van Slyke, lead poisoning has long been recognized as a cause of gout. They cite Magnus-Levy's thirty-six cases of gout, thirteen of the patients having definite lead poisoning and six others presumably having it. With this in mind the patient was questioned closely as to a possible contact with lead. He stated that for fifteen years he has smoked in a pipe one type of tobacco, which is wrapped in a lead tin foil. The tobacco was in actual contact with the foil, sheets of which measure 17.5 by 25 cm. For purposes of economy the patient has made a practice of saving and selling this foil. Recently he had a pile of flat sheets about 15 cm. in thickness. Before disposing of it he brushed the tobacco from each sheet. There were between one and two hundred sheets, each of which was covered with many little flecks of tobacco and coated in spots with a gray, oily substance, the nature of which has not yet been determined. The salvaged tobacco was then added to the general supply and smoked. Two sheets of the foil and the tobacco pouch were obtained for examination.

The physical examination of the patient was not significant beyond the appearances suggesting gout in the right foot. Pertinent laboratory results were blood uric acid 4.5 mg., no lead line demonstrated at the gum margins, few stippled cells noted in the blood smear, and no abnormal porphyrin in the urine. Two twenty-four hour urine specimens examined by the Ross-Lucas method were found to contain 3 mg. and 1 mg. of lead. The normal lead values for a twenty-four hour specimen range between 0.05 and 0.1 mg. During these tests the patient took 15 grains (1 Gm.) of potassium iodide daily.

A spectroscopic examination was made by Clarence Dupont, spectroscopist of the Strong Memorial Hospital, of the foil, the oily substance observed on it, and the tobacco. With each test lines indicating excessive amounts of lead were noted at wave-

lengths 2,837.32 and 2,833.07 angstroms. A portion of the tobacco taken from the patient's pouch was found to contain 6 mg. of lead per hundred grams, approximately the amount smoked daily. It is estimated by previous investigators that from one fifteenth to one fourth of the lead in tobacco is taken into the body by pipe smoking. This would mean that the patient probably inhaled from 0.4 to 1.5 mg. daily.

The foregoing facts suggest that the patient was definitely poisoned by the lead in the tobacco packed in a foil containing a large amount of lead. The symptoms resulting therefrom presented the clinical picture of gout.

In addition to lead contamination from the foil, there are, in all probability, variable amounts of lead on the tobacco itself caused by the sprays which are used by the growers. Evidence of this fact has been found recently by several investigators. Many of the widely advertised brands of cigarets contain lead in excessive amounts, so that persons employed in an industry or living under circumstances in which they might inhale or ingest small amounts of lead may, by the supplemental lead obtained from the free use of cigarets or smoking tobacco, easily contract low-grade or chronic lead poisoning.

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## Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

### ACUTE OTITIS MEDIA AND SWIMMING

*To the Editor:*—My son, aged 8 years, last year developed acute otitis media, with spontaneous perforation, from swimming, and the condition completely healed soon after. What measures do you advise to prevent recurrence, if he wants to swim again this year? Please omit name.

M.D., New York.

ANSWER.—In order to prevent a recurrence of acute otitis media due to swimming, it is advisable for the patient not to dive and not to allow water to enter the external auditory canal. The ear may be reinfected in diving by water forcing its way up the eustachian tube. To keep water out of the external auditory canal it is best to block the canal with a piece of sterile lamb's wool and wear a bathing cap. The patient should also be cautioned about blowing his nose violently as swimmers often do in order to free the nasal passages.

### PERCUTANEOUS TUBERCULIN TEST AND TAPE TEST

*To the Editor:*—In *Queries and Minor Notes* in the tuberculosis number of *THE JOURNAL* (Dec. 7, 1935) you mention the percutaneous method tuberculin test (described by Beatrice Lovett) and the tape test (described by Ernst Wolf). Will you please give me the technic and source of material for both these tests? Kindly omit name.

M.D., Arizona.

ANSWER.—The percutaneous method of administering tuberculin described by Lovett (*Am. J. Dis. Child.* 37:918 [May] 1929) is a modification of the Moro test. It consists of rubbing the skin over the region of the sternum with ether in order to remove all oil from the pores. This is accomplished when hyperemia appears. To this area is applied a piece of concentrated old tuberculin about the size of a pinhead, which is rubbed into the skin with the fingers. If the test is negative, the skin will appear normal at the usual time of reading the test; that is, in about forty-eight hours. If the test is positive, a definite reaction will be seen at this time to consist of papules scattered about the area but there may be little or no reddening of the skin. A marked reaction, however, consists of folliculitis, with small vesicles or pustules and intense inflammation of the skin. The material employed by Lovett is manufactured and dispensed in collapsible tubes by Dr. Fresenius, Hirsch Apotheke, Frankfurt-on-Main. However, other tuberculin ointments are now available for this test.

The tape test of Wolff (*Am. Rev. Tuberc.* 27:308 [March], 1933) consists of cleansing the skin in the paravertebral region between the eighth and eleventh thoracic vertebrae with green soap and water. When dried, the area is bathed with benzene. After drying again, a drop of tuberculin ointment the size of a pea is applied over the right side of the cleansed area and on the left side a drop of control ointment is used. Both drops are then covered with pieces of adhesive tape two inches square. This is tightly applied. In forty-eight hours the tape is soaked with benzene and removed. Ten minutes later the reaction is observed. When positive, the area over which the tuberculin ointment was applied shows papules, erythema, induration and pigmentation. He finds that this test is generally comparable in results with the intracutaneous test in a dilution of 1:100. The ointment used for this test was devised by Wolff of the pediatrics department of the University of California Medical School and was especially prepared for him. It contains a highly concentrated tuberculin and killed tubercle bacilli incorporated in an ointment base that is able to penetrate into the cutis.

#### TREATMENT OF GONORRHEA

*To the Editor*—A male patient contracted gonorrhea in 1912 and after having received injections of silver nitrate, massages and sound treatments for two years was discharged as cured. In 1917 sickness recurred. It might also have been reinfection. He received about the same treatment as before without result, until in 1919 he engaged the services of a university professor, who discharged him as cured after two months of treatment. A year later, in 1920, he again had a discharge, and the general feeling was bad. After a few months of treatment by the same professor, he was discharged again as completely cured and allowed to get married, which he did that same year, and has four healthy children. He felt well until 1932, when symptoms of occasional discharges, mostly mucous, and general bad feeling reappeared. Physical examination revealed a small nodule in the right epididymis. The prostate was normal in size and moderately firm in consistency. The seminal vesicles were somewhat thickened, the right considerably dilated and indurated. Discharges and fluids obtained by prostatic massage were frequently examined and showed numerous pus cells but no gram-negative diplococci. On cystoscopic examination the instrument passed with some difficulty because of a tight posterior urethra. The interurethral bar was large and somewhat enlarged, otherwise the results were normal. A roentgenogram was negative. The patient received a series of treatments consisting of prostatic massage, urethral instillations and bladder irrigations, vaccine and foreign protein injections. The patient appeared to be comfortable for a few weeks, when the symptoms recurred much to his dismay. I would appreciate any suggestion for treatment of this case. Kindly omit my name.

M D, New York.

*ANSWER*—The urethral discharge in 1917, if it was gonorrheal, undoubtedly was a new infection. The probable reasons for continuance of trouble for two years were either the patient's conduct or overtreatment. The professor's ready success was probably due to the fact that he controlled the patient and used either milder or no local treatment. It is probable, however, that the patient was left with an infected prostate, which in 1920 caused a urethral discharge which was not gonorrheal, and the professor, knowing that it was not gonorrheal, had no reason to interdict matrimony.

The clinical picture starting with 1932 is not so clear. There are features suggesting long-standing prostatic infection and, on the other hand, if the clinical observations are correct, it could be due to tuberculosis. The latter is suggested by the nodule in the epididymis, induration of the seminal vesicle and the "tight posterior urethra." If the patient had an attack of epididymitis previously and the nodule in the epididymis is in the lower pole, the epididymal condition is in all probability not of tuberculous origin. If not, and the nodule is in the upper epididymal pole, this disease merits serious consideration. Seminal vesicular palpation is fraught with so many possibilities for error that what seems fibrosis to one is to another merely tissue density normal to the individual. It is rare that tuberculosis of the prostate of sufficient degree to give the impression of tightness on the passage of an instrument does not cause nodulation of the gland. Thus, the first most important thing is to rule out that disease. Otherwise grave harm may be done by forms of treatment appropriate to other diseases.

The repeated attacks of urethral discharge, whether or not gonorrheal, the large amount of pus in the prostatic secretion, "the tight posterior urethra," and the enlarged interurethral bar all bespeak marked prostatic infection. If tuberculosis is ruled out, this probably started as the result either of gonorrhea or of the treatment, though one should not lose sight of oral infections, teeth or tonsils, as possible factors.

So far as treatment is concerned, tuberculosis being ruled out, it is probable that no amount of prostatic treatment will render such a gland pus free. Much, however, may be done for the prevention of possible arthritic or other focal infective

conditions by occasional digital drainage of the gland by rectum. Such patients frequently are candidates for median bar formation and should be observed from year to year with that in mind.

The age of the patient is not mentioned but, so far as the nongonorrheal discharge is concerned, some comfort may be gained from the fact that such discharges from any cause are rare after 40 years of age and almost do not occur after 45.

If local treatment for the urethral discharge is carried out it should be with half strengths of any of the substances generally used for that purpose, to avoid the building up of protective squamous surfaces, later to shed and cause more urethral discharge.

#### IRREGULAR VAGINAL BLEEDING AND ENDOCRINOLOGIC TREATMENT

*To the Editor*—My wife, now 44 years of age, who has always been a normal, healthy woman with regular menstrual periods, is now approaching the menopause. Menstruation has been irregular for the past few months and the period is longer than normal. Also she is rather nervous at this time for the first time during our twenty-three years of married life. I am an internist and have very little knowledge of what can be done to make this period of her life as normal as it should be. I do know, however, that much can be done and am asking you for information and advice. Will you please let me know what medicines, if any, should be given? I know that ovarian extracts are used, also I see "Ergoaprol," made by Martin Smith, which is freely advertised. Is this an "accepted" article? Please advise me and refer me to any pertinent literature.

M D, South Dakota

*ANSWER*—In general there are three types of irregular vaginal bleeding at the menopause. First, there is bleeding which corresponds to a normal menstruation but which occurs not at the usual interval of approximately twenty-eight days but at multiples of this interval; that is, every two, three or four months. In other words, the patient is menstruating normally except that some periods are skipped completely. Irregularity of this type usually has no serious significance, but it should be carefully watched and, if it persists, cancer should be suspected. The second type of bleeding is metrorrhagia; the periods occur at the usual intervals but the amount and duration of the flow are variable and excessive. Such irregularity is commonly the result of endocrine disturbances of a benign nature but occasionally is the first indication of carcinoma of the corpus uteri. The third type of irregularity is metrorrhagia, or bleeding between the menses. By common usage metrorrhagia signifies uterine bleeding occurring at unpredictable intervals, with no regularity of duration or amount. Such bleeding is of the gravest significance. While it may be the result of relatively harmless disorders (retained secundines, polyps, endocrine disturbances), the physician bears a heavy responsibility until the diagnosis is assured. Particularly in women of middle age is metrorrhagia ominous, for they are in the "cancer period" and metrorrhagia is the chief sign of early carcinoma of the cervix.

Therefore the physician consulted by a patient in the forties because of "irregular menstruation" must be continually on guard and should advise biopsy of the cervix and curettage if he has any sound suspicion of cancer. Treatment is not permissible until cancer has been ruled out by biopsy, curettage and histologic examination. Since endocrine preparations have generally been of little value in correcting menopausal metrorrhagia, castration by radium or x-rays (preceded of course by curettage) or hysterectomy is usually employed when the bleeding must be stopped. It is hardly necessary to add that postmenopausal bleeding should excite fear of cancer and demands thorough investigation at once.

The results of endocrine therapy in the treatment of vasomotor instability, nervousness and other subjective manifestations of the menopause have been discussed in *THE JOURNAL*, by Sevringhaus (Feb. 23, 1935, p. 624), Frank, Goldberger and Spielman (Aug. 11, 1934, p. 393) and Novak (May 18, 1935, p. 1815, Aug. 31, 1935, p. 662). Although Frank has been skeptical of the results of such treatment, most writers believe that the use of estrogenic substances is logical and of distinct value. Kurzrok (*Endocrinology* 16:361 [July-Aug.] 1932) has studied the rate of excretion of estrogenic substance during the menopause and believes that replacement therapy is indicated when estrogenic products are not being excreted in the urine. Since it is not possible in general practice to determine the rate of excretion, patients are usually treated empirically. Novak recommends a dose of from 100 to 200 rat units daily (theelin, thelol, ammotin oral, progynon). This dosage applies if the administration is parenteral, the dose by mouth is five times as great.

Since the use of the drug is empirical, the dose should be increased until the desired effect is obtained. Provided carcinoma of the uterus has been ruled out, as it must be before treatment is begun, no danger is involved with these dosages.

Uterine bleeding may be a concomitant of the endometrial hyperplasia that results from the estrogenic drugs, and undesirable stimulation of the libido may be noted. If so, the dose should be decreased. If the flushes and nervousness diminish satisfactorily, the dosage should be gradually lowered and maintained at the empirically determined optimum level. None of Sevringhaus's ninety-five patients required treatment more than thirty months. The use of mild sedatives over long periods is recommended in conjunction with the endocrine therapy.

"Ergopioli" is an irrational mixture rejected by the Council on Pharmacy and Chemistry in 1914. The discussions of Sevringhaus and of Biskind (*THE JOURNAL*, Aug. 31, 1935, p. 667) furnish detailed information on estrogenic substances now on the market.

#### FUNCTIONAL VOMITING

*To the Editor*—A woman, aged 20, came to me for treatment in June 1935 with a complaint of vomiting without nausea within an hour after meals. She had been under treatment for three years by other physicians without improvement. The first time she vomited was in high school when she found she had a Latin teacher she did not like. She gradually began to vomit more frequently and sometimes vomited all three meals. She lost about 20 pounds (9 Kg.). She was vomiting all her meals when she came to me. She does not vomit water or candy. The patient is slender and weighs about 100 pounds (45 Kg.). Physical examination was essentially negative except for rather faulty posture. Blood pressure was 98 systolic, 66 diastolic, with a pulse of 87. A gastro-intestinal x-ray series showed a normal functioning stomach and intestine but a pronounced visceroptosis. There was no spastic condition of the pyloric valve. Roentgen examination of the esophagus showed the valve at the cardia to be half that of normal in its longitudinal measurement. Esophagoscopy showed nothing unusual. The basal metabolic rate was minus 10. The patient was put on six small dry meals a day. Fluids were given half way between feedings. She elevated the foot of the bed 12 inches. She wore a corset for correction of the visceroptosis. By August (three months) she was improved to such an extent that she would go two weeks without vomiting. Owing to warm weather (and without my consent) she quit wearing the corset. Vomiting became more frequent. During the summer she had irregular menstrual periods, sometimes missing one or two. During September and October I gave her injections of anterior pituitary, estrogenic substance and corpus luteum. Her menstrual cycle is normal now. She has bilateral tenderness in the lower quadrants. The hymen is intact. There is a rather profuse vaginal discharge, mucoid in character. She is sensitive to belladonna in dosage above six drops. She thinks her vomiting is of little less frequency when taking that amount. I have not done a gastric analysis. If you have any suggestions on treatment of cases of this type, I shall be glad to get them. Do not publish my name, please.

M D, Ohio

**ANSWER**—From the description presented, it appears probable that the patient's symptoms are not due to gross organic pathologic changes either of the central nervous system or of the gastro-intestinal tract. As to the latter, there are no data suggestive of malignancy, chronic cholecystitis or gastric ulcer, nor is it likely that the vomiting can be attributed to visceroptosis, since a descent of the viscera of sufficient degree to cause emesis could not be corrected by an abdominal belt. Further, the rare possibility of a visceral constriction by a congenital peritoneal band, although not ruled out by an x-ray series done with the usual technic, is nevertheless incompatible with the comparatively late onset of the patient's symptoms or with their improvement under what seem to have been essentially suggestive measures of therapy. It would appear likely, then, that the patient's vomiting is of so-called functional origin. In this event, specific treatment of the symptoms alone can produce only a temporary amelioration, since a broader evaluation of the patient's personality and problems is essential for effective therapy. In the absence of more detailed information, it is of course idle to speculate as to the possible psychodynamic mechanisms underlying her illness; these can be discovered and treated only after careful investigation by a competent psychiatrist.

#### CIRCULATORY DIFFICULTIES IN ARTERIOSCLEROSIS

*To the Editor*—A man, aged 45, has arteriosclerosis of the legs and feet due to diabetes, discovered recently. He feels well otherwise, he wants to walk but suffers greatly several hours after walking. What other exercise, active or passive, can he take? What can be done to relieve pain after walking? What are the possibilities of establishing collateral circulation and how could that process be assisted? Please omit name.

M D, New York

**ANSWER**—It is important to know whether or not the arteriosclerosis indicated has caused occlusion of the main arteries to the extremities. This can be determined by palpation of the dorsalis pedis, posterior tibial and popliteal arteries for pulsations, notation of color changes when the feet are elevated and dependent, and estimation of the warmth of them.

Absent or diminished pulsations, abnormal pallor resulting from elevation, abnormal rubor resulting from dependence, and unusual coldness of the feet indicate occlusive arterial diseases.

Conversely, normal or nearly normal pulsations, minimal color changes resulting from change of posture and warm feet indicate adequate arterial circulation. Intermittent claudication is a type of distress frequently resulting from arterial insufficiency. It is produced characteristically by exercise and relieved in a few minutes by rest. It is improbable that the distress mentioned by the correspondent is intermittent claudication, as it persists long after discontinuance of walking. However, the patient should be questioned carefully about the distress. Intermittent claudication has been treated with extracts of pancreas (insulin free) or of skeletal or heart muscle (Barker, Brown and Roth: *Tr. Am. Therap. Soc.* 33:115, 1933; *Am. J. M. Sc.* 189:36 [Jan.] 1935) or with intermittent negative and positive pressure as indicated by Herrmann and Reid and by Landis, reviewed by Allen and Brown (*THE JOURNAL*, Dec. 21, 1935, p. 2029). The last mentioned method may be valuable in establishing collateral circulation. Contrast baths, postural exercises and radiant heat and the intravenous injection of typhoid vaccine may aid likewise (Brown, G. E.: *Thrombo-Angiitis Obliterans, Surg., Gynec. & Obst.* 58:297 [Feb.] 1934).

Diabetic neuritis must be considered in the diagnosis of the condition of the correspondent's patient. Usually there are manifestations of nerve injury, as diminished muscle strength, tendon reflexes or sensation. Frequently evidence of inadequate arterial circulation is likewise present. This is occasionally a very difficult condition to treat satisfactorily. Control of the diabetes is important. Measures to increase the circulation are indicated if the circulation is less than normal. Irradiation over the lumbosacral area by an experienced roentgenologist may diminish the distress. Recently, concentrated vitamin B has been found to be of value. A trial of it is certainly worth while.

#### INFERTILITY AND PRODUCTION OF SPERM

*To the Editor*—I am not a urologist but an eye and ear specialist. I am interested in a very famous dog, with one exception probably the most prepotent sire of his breed ever imported into America. This dog is now not quite 5 years old. During his first two and a half years he was a prolific sire and in his stud career produced many great show winners. Without illness and without overwork, he suddenly began to miss with his bitches until he finally ceased entirely to produce pups, at about 3½ years of age. His desire is as normal as ever and his copulating ability unimpaired. This sterility seemed to be coincident with an atrophy and softening of the testicles. It was then noted that the testicles appeared unusually small compared with other dogs of his breed, but men vary in this particular and it may have been that the organs were always small. The dog was sent to the kennel of a professor of veterinary medicine in Toronto, where he remained about eight months, being given special attention in feeding, in the hopes that change of climate and so on might improve him. He was mated to half a dozen bitches in succession, with negative results. The professor used no sexual stimulants. As dogs are used in laboratories because their diseases and reaction to drugs are similar to those of men, I would ask: 1. Is there ever in mature life an atrophy of the testicles due to disease? 2. Are men in the prime of life (known to have been fertile) ever subject to such infertility as has come to this valuable dog? 3. Is there any remedy, not empirical, known to urologists, that will stimulate the production of spermatozooids? 4. Is there any explanation for the continuance of this dog's copulative virility and of the disappearance of spermatozooids? Such urologic books as I have consulted do not enlighten me on these questions. The professor in Toronto reported, after examination, absence of spermatozooids. Please omit name.

M D, Louisiana

**ANSWER**—1 and 2. Yes. Several conditions, among them high febrile states, lead to some testicular diminution and loss of spermatozoa in man. Usually, perhaps, recovery may be expected to follow disappearance of the inciting cause, provided testis injury is not sufficiently great to have eliminated spermatogonia from the testis. It has been assumed, with apparently good grounds, that business worries or other psychologic states may sometimes be accompanied by temporary azoospermia. In highly pedigreed stock (especially stallions and jacks) great difficulty is experienced in keeping them in good breeding condition.

3. Remedies thus far attempted fall largely into two general classes: (a) nutritional and (b) endocrine. Proper food and exercise outdoors have been greatly emphasized. It is known that dogs confined to laboratory cages and fed well may lose temporarily the capacity to produce spermatozoa. Wheat germ oil has been tried as a supplementary dietary factor. Endocrine treatments have been largely restricted to introduction of gonad-stimulating substances. Reports on human cases of male sterility suggest occasional beneficial results from treatments with injections of the gonadotropic principle of pregnancy urine. Daily injections of 100 to 500 rat units for a few weeks might prove efficacious in restoring spermatozoa to the discharge.

4. There are many cases in which spermatozoa are not formed and yet copulative ability is retained. Such is true for all naturally occurring cryptorchids (undescended testes) in which both testes are retained in the abdomen. The germ cells, so far as known, do not contribute to the internal secretion of the testis which is responsible for inciting the copulatory drive.

#### IMPLANTATION OF GOLD SPHERE IN TENON'S SPACE

*To the Editor:*—Is the operative procedure of implanting a gold sphere in Tenon's space one that is generally accepted by the medical profession and used by leading ophthalmologists? It is my understanding that this procedure is considered safe so far as the health and life of the patient are concerned, and that it is generally accepted as a constructive technic for better cosmetic results when an eye has to be enucleated. I have never known any complications to arise other than the occasional loss of the gold sphere from the orbit at a later date. My reason for proposing this question is that a number of months ago I enucleated an eye for a patient and implanted a gold sphere. It was a clean case. There were no complications. The cosmetic result was good and there was good motility of the artificial eye. I am now the defendant in a \$50,000 malpractice suit in which the plaintiff alleges that it was wrongful to implant the gold sphere and that six months later it was necessary for him to have the gold sphere removed in order to save his life. I was not informed by the other ophthalmologist of any trouble with the orbit. This man rushed the patient to the hospital and removed the sphere. The first information that I received about the removal of the sphere was when the sheriff served me with the court summons.

M.D., Indiana.

*ANSWER:*—The implantation of a gold ball has been practiced since it was first proposed by Webster Fox in 1902. Numerous articles recommending that technic have appeared, particularly by Greenwood (*Arch. Ophthalm.* 43:1, 1914), Dimitry (*Am. J. Ophthalm.* 2:653 [Sept.] 1919), Carrasco (*Zentralblat. f. d. ges. Ophthalm.* 1921) and others. In general, the procedure is recognized by ophthalmic surgeons throughout as a legitimate, safe procedure. It is impossible to conceive of any condition occasioned by the gold sphere that could endanger the life of a patient. If a malignant tumor had developed in the orbit, in no way could it be attributed to the presence of the gold sphere. It is suggested that an endeavor be made to find out why the other ophthalmologist considered it essential to rush the patient to operation "to save his life."

#### THE CONSTITUENTS OF TOBACCO SMOKE

*To the Editor:*—Does smoking tobacco have any proved effect on the thyroid or on thyrotoxicosis? Does tobacco contain iodine? Also please state if possible why so many people gain weight rapidly after discontinuing tobacco.

DENVER F. GRAY, M.D., Rusk, Texas.

*ANSWER:*—Dr. Walter A. Bastedo in his article "What the Physician Should Know About Tobacco" says that in some cases of hyperthyroidism the use of tobacco raises the basal metabolism. None of the several available publications that discuss the constituents of tobacco make any reference to the presence of iodine in tobacco smoke. In addition to nicotine and its derivatives, tobacco smoke contains such toxic substances as pyridine, thiotetrapyridine and isodipyridine, prussic acid, pyroline, ammonia, collidine, formaldehyde and carbon monoxide. In his book "Tobacco and Physical Efficiency: A Digest of Clinical Data," Pierre Schrupf-Pierron quotes other investigators to the effect that collidine is more poisonous than nicotine, although there are only traces of it in tobacco smoke. The smoke of ten cigars, this author notes, contains from 4 to 5 mg. of prussic acid. The smoke of 1 Gm. of tobacco contains from 0.9 to 1.2 mg. of pyridine, thiotetrapyridine and isodipyridine; investigators differ as to whether these products share in the poisonous effects of tobacco. One gram of tobacco yields from 3.22 to 5 mg. of ammonia. The formaldehyde in tobacco smoke, combined as it is with the nicotine, is said to diminish the toxicity of the smoke. Authorities agree that carbon monoxide is one of the most harmful elements of tobacco smoke from a practical point of view. Baumberger found that tobacco smoked as cigarettes yields about 8.3 cc. of carbon monoxide per gram of tobacco smoked and that about 61 per cent of the carbon monoxide is absorbed, if the smoke is inhaled.

It is not necessarily true that people gain weight rapidly after discontinuing the use of tobacco. In some persons tobacco lessens the appetite and the pangs of hunger; when not habituated to tobacco, such persons naturally would eat more food, and that may account for their increase in weight after discontinuing the use of tobacco.

#### CHRONIC ENDOCERVICITIS

*To the Editor:*—What are the possible causes of a persistent mucopurulent (predominantly mucoid) discharge from the cervix uteri, of eight months' duration, in a white woman, aged 30, with a ruptured hymen (but whose other pelvic organs appear to be normal to bimanual examination), with a normal menstrual history except for a prolonged interval of about three weeks, one year ago. The discharge is negative for gram-negative diplococci and *Trichomonas* on repeated examination. The cervix bleeds slightly when the mucus is removed too thoroughly with a cotton applicator. A biopsy was negative for evidence of malignancy. The discharge did not disappear on endocervical coagulation, although a concomitant erosion did. Are there any factors above the cervix that might be responsible? In what manner does the sex life influence such discharges aside from infection? Would you recommend ionization with a surgical diathermy electrode?

M.D., Pennsylvania.

*ANSWER:*—The patient has endocervicitis and the infection is probably persistent because of inadequate drainage.

The etiology of such infections is not only of interest but also of therapeutic importance. In the case of gonorrheal disease it is seldom possible to identify the gonococcus in the cervical discharge after the early weeks of infection. In establishment of a diagnosis, a history of exposure and demonstrable infection of Skene's ducts and/or the Bartholin glands affords more dependable evidence than search for the gonococcus, although the latter is not to be deprecated.

Postabortive infection, cervical lesions incident to childbirth, and instrumentation and medication of the cervix in attempted relief of various disorders are other common causes of persistent mucopurulent leukorrhea.

As stated, in the majority of instances the discharge persists because drainage is inadequate. There may be gross obstruction of the cervical canal or, more frequently, there are microscopic pockets that fail to drain. Endocervical cauterization owes its efficiency to establishment of drainage rather than to eradication of the cervical glands.

Infection above the level of the cervix is seldom responsible for a persistent discharge; even in the case of pyometra an obstruction of the cervix is usually the primary cause of the trouble.

In the treatment of persistent mucopurulent cervical discharge a Hegar dilator should be passed to make certain whether the canal is sufficiently patent. Granted that there is no demonstrable gross obstruction, radial endocervical cauterizations with a nasal tip cautery may suffice to effect a cure. Some prefer endocervical coagulation. In the event that these measures fail, amputation of the cervix, or even a complete hysterectomy, may be necessary in extreme cases.

#### SENSITIVITY TO CHICKEN AND EGGS

*To the Editor:*—I find that I am sensitive to chicken and all products, as severe gastro-intestinal symptoms follow the eating of chicken or eggs in all forms, and the exposure to feathers or dust of a coop brings on severe congestion of the conjunctiva, asthma, and later, as the bronchial mucus is swallowed, the familiar gastro-intestinal symptoms. Is there anything I can do to develop an immunity? My literature is either barren or so voluminous that the grain of truth is lost in the mountain of chaff.

M.D., San Francisco.

*ANSWER:*—The antigens of chicken, eggs and feathers are not related, although one of the proteins of egg white is the same as one of those found in chicken serum. Clinical sensitivity, therefore, to these three antigens in the same person should be considered probably as a coincidence, and treatment should be directed to each one of the three separately.

The simplest and probably the most effective treatment against all three of these antigens is their complete elimination from the individual's diet and environment. Any food containing even a trace of egg, for instance, should be avoided. After such complete elimination for a year or more, the result is frequently an increased tolerance to the food so that small amounts, as, for example, the amount of egg used in baking and cooking, may be tolerated.

Oral immunization to foods may be tried when elimination is not possible. Several forms of oral immunization have been tried. First, the feeding of a minute amount (i. e., two or three drops of egg white, in relatively low grade cases of sensitivity) about one half to three quarters of an hour before the meal containing the antigen responsible for the trouble. This has been discussed by K. P. Eiselsberg and F. Kauders (*Wien. klin. Wchschr.* 47:679 [June 1] 1934), who give extensive references. Another method is that of the feeding of specific propeptan before the meal (Urbach, Ehrlich: *Skin Diseases and Nutrition*, Vienna, Wilhelm Mandrich, 1932). A third method is to start with a very dilute solution of the antigen, increasing the dosage very gradually every third or fourth day and always

keeping below the dose that produces a constitutional reaction (Rackemann, F. M. *Clinical Allergy*, New York, Macmillan Company, 1931, p. 313 and following)

Injection of food antigens is dangerous and is not to be recommended for use except by a worker trained in allergy

If feathers cannot be completely avoided, subcutaneous injections for hyposensitization are advisable. These should be given very gradually, starting with a dilute solution

#### CORPUS LUTEUM CYST

*To the Editor*—A white woman, aged 22, single, a school teacher, weighing 125 pounds (57 Kg) and 5 feet 6 inches (168 cm) in height, complains of pains in the stomach intermittently before menstruation starts, the periods are irregular, scanty, of one to two days' duration, and accompanied by cramps at times. Recently I was called to see her. The temperature was 98.6 F, the pulse 60. She was complaining of cramps in the lower part of the abdomen with pains going to both shoulders aggravated to such an extent by changing position that she screamed with pain. The woman was well developed, was a brunette and had numerous large coarse black hairs from the symphysis to the umbilicus, with tenderness over the tubes and bladder and marked tenderness over the pit of the abdomen. Otherwise the physical examination was essentially negative. In four fours I was called to see the patient again. This time she was complaining of shortness of breath and marked distention of the stomach with pyrosis, nausea and vomiting. The temperature was 97, the pulse was 120 and the hands and legs were covered with a cold clammy sweat. I washed out her stomach, gave her a purgative and corpus luteum 1 cc intramuscularly and advised fluids and heat. Later in the afternoon I saw the patient again. She was resting much better. The temperature was 98.6 the pulse 120. The next day she began to menstruate. She was much improved. The following day she came to my office. The blood count was 6,750 leukocytes, 3,300,000 erythrocytes, hemoglobin 75 per cent and the urine was normal. The patient's mother died of cancer about two years ago. What is the diagnosis of this case and the physiologic mechanism back of the trouble? Is there a possibility of a neoplasm at her age? What treatment would you advise? Does one have to consider acute pancreatitis? The patient has had a number of these attacks before her periods, but none so severe, and in none has she had such definite symptoms of shock. The patient had always been in good health before these attacks started and has been gaining in weight. Please omit name. M D, Missouri

*ANSWER*—One must consider particularly the presence of a corpus luteum cyst because of the premenstrual disturbances, and the possibility of rupture at the time of the symptoms of shock. Sometimes the rupture of the cyst may lead to spontaneous cure, or again the cyst may recur. No note is made of a rectal examination. The result of such an examination revealing a cystic enlargement is valuable in the diagnosis. Other types of pelvic disorder may be present. It would be advisable to have a pneumoperitoneum made and an x-ray film of the pelvic organs for further elucidation.

#### LOW SPECIFIC GRAVITY OF URINE

*To the Editor*—What is the significance of a urinalysis with specific gravity of practically 1.000 the last fifteen years with no albumin or other gross abnormality, and with the color almost like that of water? The patient is now past 82 years of age. He has never had any serious illness and apparently is in perfect health with the possible exception of slight prostatic enlargement necessitating arising once or twice a night for urinating, sometimes but not always. Does low specific gravity always mean abnormality? I am the patient. Please omit name.

M D, South Dakota

*ANSWER*—The normal urine volume and specific gravity are a function of the fluid intake and of the amount of loss of fluid either by perspiration or from the lungs and intestinal tract. The total solids excreted daily are somewhat less variable and average about 60 Gm. As a result, the specific gravity tends to vary in inverse ratio to alterations in volume. The normal range of specific gravity in this country is about 1.008 to 1.028. The specific gravity decreases with increased intake of fluids. However, it never drops to 1.000. Such a reading indicates the use of an inaccurate urinometer. In diabetes insipidus, associated with a lesion in the posterior lobe of the pituitary gland or the adjacent area of the brain, the patient may secrete from 3 to 30 liters of urine with a specific gravity as low as 1.001.

A low specific gravity of the urine, except in diabetes insipidus, does not alone indicate any abnormality. If the kidney function is normal, the avoidance of fluids for twenty-four hours should cause the specific gravity of the urine to rise to 1.025 or higher, and the drinking of from 1,200 to 1,500 cc of water should cause a drop to 1.003. The specific gravity of the urine in itself is the most useful single test of renal efficiency and plays an important part in the concentration and dilution tests of kidney function.

#### USE OF MANGANESE IN HYPERGLYCEMIA

*To the Editor*—Please inform me whether there is any scientific back ground for the use of manganese dioxide in the treatment of hyperglycemia with glycosuria. I have a patient who had from one to four plus sugar in the urine regularly before she began taking manganese dioxide, 5 grains (0.3 Gm), after each meal. The urine is now free from sugar but she feels rather weak. What is the probable explanation of this? Could it be due to the manganese dioxide she has been taking? How long is it safe to administer manganese dioxide in 10 to 15 grain (0.65 to 1 Gm) doses daily? Is there any danger of ill effect of any nature and, if so, what are the usual initial symptoms? Please omit name.

M D, Georgia

*ANSWER*—Manganese resembles iron in that it is absorbed with difficulty and eliminated chiefly in the stools. Chronic manganese intoxication has thus far been observed only in workmen exposed to massive inhalation of manganese dust. It presents a symptom complex of muscular weakness and tremor, resembling somewhat that of parkinsonism but often accompanied by psychic disturbance. The condition has not been reported from the medicinal use of manganese. Experiments on rabbits have proved negative as to any effect on carbohydrate metabolism. It is only when such animals were subjected to chronic poisoning by subcutaneous injections of manganese sulfate that hypoglycemia was produced, to a marked degree only in the terminal stages. Without data as to the patient's diet it is impossible to evaluate the observation recorded. The patient should be treated by the proper and adequate ingestion of suitable food and the care of the diabetic condition along accepted lines.

#### DIAGNOSIS OF UNUSUAL ERUPTIVE DISORDER

*To the Editor*—A boy, aged 11 years, gives a negative history except for an attack similar to the one from which he is now suffering, about a year ago, which lasted for three months. He is robust and physically normal with the exception of 1 degree of elevation in temperature. There is no local evidence of focal infection. The present complaint is an eruption of the skin extending over the entire anterior surface of the chest, the skin showing very small vesicles rather close together. The skin is boggy and apparently contains fluid in the deeper tissues. The dependent portion of the area is edematous. The skin is sore and itchy, though not reddened. The patient is unable to walk in the upright position because of his desire to keep the clothing from touching the skin. In three days the condition has cleared up in the upper part of the chest but is present over the abdomen, upper part of the thighs, and scrotum. The urine is normal chemically and microscopically.

ROLLIN D. WORDEN, M D, Ravenna, Ohio

*ANSWER*—On the basis of the history given it would seem that a diagnosis should be considered from three special points of view: (1) allergic, (2) parasitic and (3) bacteriologic.

The customary tests for allergy may be helpful in eliminating this possibility. Scrapings from the skin might disclose that the condition is due to an extensive scabies with an accompanying cellulitis, or a staphylococcal infection of the skin might be determined.

Treatment will depend primarily on the cause of the condition, but in any event soft clean muslin underwear should be worn next to the skin. The underwear must be changed daily. The parts involved should be bathed with bran water without the use of soap if the skin is much irritated. Calamine lotion without phenol (carbolic acid) may be useful in relieving the itching. Until a definite diagnosis is established, other essentials for successful treatment cannot be decided on.

#### EFFECTS OF CERVICAL SYMPATHECTOMY

*To the Editor*—What are the late results of cervical sympathectomy? Textbooks and journals to which I have access give no information as to harmful sequelae that may appear, because of the operation, from five to fifteen years after resection of the cervical sympathetic ganglions. Alexander performed bilateral extirpation of the superior cervical sympathetic ganglions in 1889 for epilepsy, and Jaboulay, Jonnesco and Ball did the same operation for other conditions. The operation as employed in the earlier cases was soon discarded but Jonnesco's operation in 1916 for angor pectoris has become a recognized clinical procedure. Sufficient time has now elapsed for reports of harmful late sequelae to appear in the literature if there are any.

E. A. PETERMAN, M D, Detroit

*ANSWER*—A unilateral cervical sympathectomy results in the unilateral Horner's syndrome, which of course is rather unsightly, since the pupil on the operated side is slightly smaller than on the opposite side. The upper lid has a tendency to droop as a result of the section of the sympathetic fibers to the small muscle that is situated between the lid margin and the tarsal plate, the tarsalis muscle. There is an associated dryness of the skin and this is particularly evident when a bilateral cervicothoracic sympathectomy has been performed. The dryness does not result in any skin diseases and is readily protected by natural oils such as the wool fats.



There have been no cerebral disturbances even though the operations have not altered the convulsive procedures.

In a few instances the increased blood supply to the mucosa of the nose and nasopharynx has resulted in a sensation of stuffiness. This phenomenon of increased blood supply has been of a more beneficial than detrimental factor in most instances.

#### CONNECTION OF MUSCLE FIBER AND TENDON

To the Editor:—What is the histologic picture and the manner of connection of muscle fiber and tendon fiber? M.D., New York.

ANSWER.—The exact nature of the connection between muscle fibers and tendon fibers requires further investigation. The sarcolemma that encloses the muscle fibers is closely attached to the white fibers of the tendons, apparently more closely attached to the tendon fibers than to the muscle fibrils themselves. Some authors (Schultze) have shown an apparent continuity in some animals of muscle fibrils across the sarcolemma with the white fibers of tendons. In other animals there is no such continuity and the muscle fibrils are easily detached from the sarcolemma at the end of a muscle fiber. It is possible that the mode of attachment of muscle fibrils to sarcolemma or to tendon fibers differs in different animals.

The connective tissue network made of white fibers and elastic fibers, which surrounds individual muscle fibers, is directly continuous with the similar network that surrounds bundles of white fibers in the tendon, and undoubtedly the greater part of the pull of contracting muscle fibers is transmitted through this continuous connective tissue envelop rather than through the attachment of muscle fibril to sarcolemma and to tendon fibers. See Baldwin: *Morphologisches Jahrbuch* 45:249, 1912.

#### HAZARD OF TETANUS IN SEWING MATTRESSES

To the Editor:—In caring for patients who work in a PWA mattress factory, I have been using tetanus antitoxin in all cases of puncture wounds with a needle. The cotton is unprocessed and I was afraid of tetanus. However, many of the women injure themselves and never report it. So far no case of tetanus has ever developed. Do you feel that it is necessary to use tetanus antitoxin in such cases? Please omit name and address. M.D., Ohio.

ANSWER.—Unless tetanus is present in the community or unless cases of tetanus have been reported from wounds produced in connection with unprocessed cotton, there is no need of giving tetanus antitoxin.

It would be well, however, to sterilize the needles at frequent intervals and to have the workers wash their hands frequently with soap and hot water, in order to minimize the danger of other types of infection.

#### SYMPATHECTOMY IN ANGINA PECTORIS

To the Editor:—Would you kindly let me know for the benefit of a relative the present status of sympathectomy in angina pectoris? Is advanced age a contraindication? M.D., Havana.

ANSWER.—A sympathectomy that includes the superior cervical sympathetic ganglions or the cervicothoracic stellate ganglions is of moderate value in the treatment of angina in younger patients not over 45 years of age, when vasospasm appears to be the predominant feature in the pain complex. Either one of these operations interrupts the fibers carrying the vasomotor impulses to the coronary arteries. The stellate ganglion resection not only interrupts the fibers carrying the vasomotor stimuli but also interrupts some of the fibers carrying afferent pain sensations.

Advanced age definitely contraindicates a sympathectomy, since the cardiac symptoms are probably due more to sclerotic changes than to any vasospasm.

#### STAB WOUND OF PRECORDIUM

To the Editor:—Nov. 15, 1935, a young Negro was stabbed in the precordial region, the wound opening the pericardial sac and penetrating the lung in that region. The heart muscle was exposed quite extensively but the pericardium was not repaired. The chest wound was closed and healed readily but the patient is not recovering his strength. He complains of weakness and lack of appetite, and he is losing weight. I would be glad to have your opinion about this case. Please omit name. M.D., Indiana.

ANSWER.—It is not possible to answer the question on the basis of the data available. It would seem, however, that the symptoms are not due to the results of the wound, if this has healed without infection or complications. The patient should be examined for some other source of infection, and perhaps the postoperative therapy should be critically reviewed. One occasionally overdoes medication in a critical case.

## Medical Examinations and Licensure

### COMING EXAMINATIONS

#### STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 23-25. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, Sept. 1. Sec., Dr. W. W. Council, Juneau.

ARIZONA: Phoenix, July 7-8. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: *Basic Science*. Little Rock, Nov. 2. Sec., Mr. Louis E. Gebauer, 701 Main St., Little Rock. *Medical (Regular)*. Little Rock, Nov. 10. Sec., Dr. A. S. Buchanan, Prescott. *Medical (Eclectic)*. Little Rock, Nov. 10. Sec., Dr. Clarence H. Young, 207½ Main St., Little Rock.

CALIFORNIA: San Francisco, July 6-9, and Los Angeles, July 20-23. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 7. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: *Medical (Regular)*. Hartford, July 14-15. *Endorsement*. Hartford, July 28. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Medical (Homeopathic)*. Derby, July 14. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA: Washington, July 13-14. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

HAWAII: Honolulu, July 13-16. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.

IDAHO: Boise, Oct. 6. Commissioner of Law Enforcement, Hon. Emmitt Pfost, 205 State House, Boise.

ILLINOIS: Chicago, June 23-26. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

INDIANA: Indianapolis, June 23-25. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5 State House Annex, Indianapolis.

IOWA: *Basic Science*. Des Moines, July 14. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.

MAINE: Augusta, July 7-8. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, July 14-16. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MISSISSIPPI: Jackson, June 22-23. Sec., State Board of Health, Dr. Felix J. Underwood, Jackson.

MONTANA: Helena, Oct. 6. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.

NEW MEXICO: Santa Fe, Oct. 12-13. Sec., Dr. Le Grand Ward, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 22-25. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

OREGON: *Basic Science*. Corvallis, July 18. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Sec., Board of Medical Education and Licensure, Mr. Clarence E. Ackley, 400 Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 1. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

RHODE ISLAND: Providence, July 2-3. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Rapid City, July 21-22. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

UTAH: Salt Lake City, July 10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 24. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

WASHINGTON: *Basic Science*. Seattle, July 9-10. *Medical*. Seattle, July 13-15. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Bluefield, July 13. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

WISCONSIN: Milwaukee, June 30-July 3. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

#### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Parts I and II*. June 22-24 and Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

#### SPECIAL BOARDS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination and review of case histories of Group B candidates will be held in various cities in the United States and Canada, Nov. 7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. All applications and case reports must be filed sixty days before date of examination. Address, 122 So. Michigan Ave., Chicago.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Cleveland, Jan. 9. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 25-26. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 29-30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Cleveland, Sept. 25-27. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

### Pennsylvania January Examination

Mr. Clarence E. Ackley, secretary, State Board of Medical Education and Licensure, reports the examination given in Philadelphia, Jan. 14-16, 1936. Forty-two candidates were examined, 41 of whom passed and 1 failed. The following schools were represented:

School	PASSED	Year Grad	Number Passed
Georgetown University School of Medicine (1931), (1934, 2)	(1933),	(1933),	4
American Medical Missionary College, Chicago	(1902)		1
State University of Iowa College of Medicine	(1933)		1
University of Maryland School of Medicine and College of Physicians and Surgeons	(1934)		1
Boston University School of Medicine	(1934)		1
University of Minnesota Medical School	(1933)		1
St. Louis University School of Medicine	(1923)		1
Washington University School of Medicine	(1934)		1
Long Island College Hospital	(1906)		1
University of Buffalo School of Medicine	(1933)		1
Hahnemann Medical College and Hospital of Philadelphia	(1934, 3)		3
Jefferson Medical College of Philadelphia (1933, 4),	(1934, 5)		9
Temple University School of Medicine	(1934, 3)		3
Univ. of Pennsylvania School of Medicine (1933, 2),	(1934)		3
University of Pittsburgh School of Medicine	(1934, 2)		2
Woman's Medical College of Pennsylvania	(1933), (1934)		2
University of Virginia Department of Medicine	(1933)		1
University of Wisconsin Medical School	(1933)		1
Dalhousie University Faculty of Medicine	(1932)*		1
McGill University Faculty of Medicine	(1934)		1
Regia Università degli Studi di Roma Facoltà di Medicina e Chirurgia	(1931)†		1
University of St. Andrews Conjoint Medical School, Scotland	(1934)		1

School  
Johns Hopkins University School of Medicine . . . (1913)

Nine physicians were licensed by endorsement from January 6 through January 30. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
University of California Medical School	(1916)	California	
University of Colorado School of Medicine	(1934)	N. B. M. Ex.	
Northwestern University Medical School	(1931)	Illinois	
Johns Hopkins University School of Medicine	(1921)	Maryland	
Harvard University Medical School	(1930)	N. B. M. Ex.	
University of Minnesota Medical School	(1923)	N. B. M. Ex.	
New York University, University and Bellevue Hospital Medical College	(1931)	New York	
Hahnemann Medical College and Hospital of Philadelphia	(1934)	N. B. M. Ex.	
Marquette University School of Medicine	(1919)	Wisconsin	

\* License has not been issued

† Verification of graduation in process License has not been issued

### Maine March Report

Dr. Adam P. Leighton, secretary, Maine Board of Registration of Medicine, reports the written examination held in Portland, March 10-11, 1936. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Ten candidates were examined, all of whom passed. Two physicians were licensed by reciprocity and 2 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine	(1934)		85
Northwestern University Medical School	(1935)		90
Boston University School of Medicine	(1933)		85
Tufts College Medical School	(1935)		85
Creighton University School of Medicine	(1934)		86
University of Vermont College	(1934)		91
McGill University Faculty of Medicine	(1934)		88, 89
Regia Università degli Studi di Medicina e Chirurgia	(1931)		79*

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Harvard University Medical School	(1930)		Ohio
Vanderbilt University School of Medicine	(1930)		Tennessee

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Yale University School of Medicine	(1933), (1934)	N. B. M. Ex.	

\* Verification of graduation in process

### Wyoming Reciprocity Report

Dr. G. M. Anderson, secretary, Wyoming State Board of Medical Examiners, reports 4 physicians licensed by reciprocity after an oral examination given in Cheyenne, Feb. 10, 1936. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Colorado School of Medicine	(1932)		Colorado
University of Illinois College of Medicine	(1932)		Illinois
State University of Iowa College of Medicine	(1934)		Iowa
University of Tennessee College of Medicine	(1930)		Missouri

## Book Notices

**The National Formulary.** Sixth Edition. National Formulary VI Prepared by the Committee on national formulary, by authority of The American Pharmaceutical Association Official from June 1, 1936. Cloth Price, \$5 Pp 556. Washington, D. C.: American Pharmaceutical Association, 1935.

Concurrent with the appearance of the new U. S. Pharmacopeia, the sixth edition of the National Formulary became available. The revisions of this standard reference work, although less significant than changes in the Pharmacopeia, do have their influence on drug therapy and prescription writing. The 320 items omitted are relatively unimportant, because most of them have long since passed into the realm of unnecessary (but unfortunately still prescribed) drugs. The 239 additions include eighty-three items discarded by the Pharmacopeia. Only twenty of these drugs were included in the later editions of Useful Drugs; only two are to be retained in the forthcoming edition—lime and pilocarpine hydrochloride. Other additions include dosage forms of new Pharmacopeial items, several preparations derived from New and Nonofficial Remedies, and at least one (tetrachloroethylene) from medical literature. It is difficult to understand why some items are continued in the present edition. Elixir of five bromides and the compound elixir of glycerophosphates containing eleven ingredients appear to be entirely superfluous. In accord with the admission to the Pharmacopeia of emulsion of liquid petrolatum, the National Formulary admits emulsion of liquid petrolatum with phenolphthalein. The number of fluidextracts has been greatly reduced, while the ampules and tablets have increased in number. Ampules involve the use of "ampule glass," "ampule water" and "ampule oil," the latter being "any bland fixed oil" controlled (only) as to acidity. Tablets are described according to the percentage content and not their dosage size. Thus, any size tablet may be official (this is true also of the one official U. S. P. tablet). The Formulary describes iso-alcoholic elixir, which is a mixture of a low and a high alcoholic elixir in correct proportions for the ingredients. The new syrup of cherry has been noted to be superior to the older syrup of wild cherry. The oral use of the newly admitted ovary, corpus luteum and anterior pituitary is contrary to practical therapeutics. The make-up of the book is improved, the index extensive, and there has been cooperation on many points with the new Pharmacopeia. It has never been established that a second book of standards is essential to pharmacotherapeutics. Certainly, as far as the physician is concerned, this second official standard is of much less importance than the U. S. Pharmacopeia.

**Experimental Changes in Liver Function: A Contribution to the Diagnosis of Liver Function.** Av Yngve Åkerrén, Med. Lic. av Södermanlands-Nerikes Nation Akademisk avhandling som med tillstånd av medicinska fakulteten i Uppsala för vinnande av medicinsk doktorsgrad till offentlig granskning framställes. Paper. Pp. 287. Uppsala: Almqvist & Wiksells Boktryckeri-A-B, 1934

Åkerrén has carried out an extensive piece of work to see whether, following inanition or the giving of a ketogenic diet, signs of deficient liver function can be elicited with the several tests in common use. The work was done on patients, many of them children, who did not have any sign of liver disease. Åkerrén first studied the amount of urobilin in the urine and found no consistent increase in the patients who were on the ketogenic regimen. There was only one person who showed an excessive urobilinuria when following this regimen or when fasting. The administration of sodium bicarbonate or of a mixture of citric acid and sodium citrate in doses of from 15 to 29 Gm. in the twenty-four hours caused a definite increase in the amount of urobilin in the urine. Åkerrén next studied the influence of a ketogenic diet on the assimilation of galactose. Here he found a definite decrease in the ability of the patients to handle the sugar. Not only did more galactose appear in the urine but there was an increase in the blood sugar. If enough carbohydrate was added to the protein and fat to prevent ketonuria, there was no abnormality in the handling of the galactose. Similar observations were made with levulose. Either the ketogenic diet or fasting commonly gave rise to a positive Hay's test, which appears to be an exceedingly delicate

test for the presence of bile acids in the urine. The ketogenic diet did not produce an increase of bilirubin in the serum. Åkerrén believes that the lessened ability of the body to assimilate galactose following the use of a ketogenic diet is due to injury to the liver, and he thinks that this may well be due to a decrease in the glycogen content of this organ and to an increased formation of ketone bodies there. He believes also that, in some cases of jaundice produced mechanically, the glycogen content of the liver is probably lessened and as a result the assimilation of galactose is interfered with. Åkerrén believes that the changes in the blood sugar which he observed are due to injury to the liver. Many of his arguments are based on a review of the literature.

This monograph should be of considerable interest to every one who is studying liver function. As the author points out, there still is much to learn about the rationale of the tests used for the estimation of liver function; thus far most of them have been used only empirically. Åkerrén is most appreciative of the work of Mann and Bollman on animals, but, as he says, it is one thing to remove six sevenths of a dog's liver and to test the function of the remaining seventh with its perfectly normal cells, and it is another thing to test in man the function of a full sized liver with perhaps every one of its cells slightly damaged or inhibited in some way.

**The Tuberculin Handbook.** By Halliday Sutherland, M.D., Honorary Physician to the Queen Alexandra Sanatorium Fund, London. Cloth. Price, \$2.75. Pp. 96, with 14 illustrations. New York & London: Oxford University Press, 1936.

Sutherland states in the preface that he believes that, apart from the discovery of the tubercle bacillus, tuberculin in the diagnosis and treatment of tuberculosis is Koch's greatest gift to mankind. The chapter on the discovery of tuberculin deals with the early work of Koch and the preparation of various kinds of tuberculin that have been used from time to time. The Use of Tuberculin is a summary of the symptoms, signs and x-ray appearances of the disease in early pulmonary tuberculosis. He cites cases to show the impossibility of making diagnoses by x-ray films without the use of tuberculin, for "by means of the tuberculin tests pulmonary tuberculosis can be distinguished from all other diseases of the lung, and what is of greater value to the patient and to the community the disease can be diagnosed in its earliest stages long before tubercle bacilli have appeared in the sputum." He further states that none of the early symptoms, physical signs or x-ray appearances are in themselves either singly or combined diagnostic of pulmonary tuberculosis and that the key to their interpretation is in the tuberculin test. The cutaneous tests, such as those of Pirquet and Moro, are presented. Here attention is called to the work of Bernard and others, who separated 171 infants with positive reactions from their tuberculous parents. Over a period of four years of subsequent observation, 7.5 per cent died of tuberculosis, whereas, of sixty-six infants who were left with their tuberculous parents, 82 per cent died during the next four years. Sutherland concludes that the contacts of every case of pulmonary tuberculosis should be tested with tuberculin and that all children found to be infected should be immunized with BCG or with tuberculin. Many physicians will wholly disagree with such a conclusion, since BCG sensitizes the tissues to tuberculinoprotein, since some excellent bacteriologists have shown that it is capable of regaining its virulence, and since almost nothing is known about its possible remote dangers. Many will agree that the use of tuberculin may be of value to desensitize such children but will question whether it has any immunizing effect. Attention is also called to the fact that for a long time it has been known that certain individuals react negatively to the tuberculin test, although tuberculosis is present. However, the number apparently is not large and the explanation of the discrepancy usually is easy. The intracutaneous test of Mantoux is discussed at some length, with a careful description of the technic of administration, preparation of dilutions, and interpretation of reactions. Sutherland looks on this as the most accurate of all the cutaneous tests. However, he is not entirely in sympathy with the substitution of purified protein derivative for old tuberculin. A good many workers will disagree with recommendations concerning the subcutaneous test, as well as statements concerning

tuberculin treatment, except when tuberculin is used to desensitize the tissues. This book presents much valuable information regarding the use of tuberculin and is worthy of careful reading by every physician.

**Thérapeutique médicale, IX: Maladies infectieuses et parasitaires.** Par M. Loeper, avec la collaboration de R. Turpin et al. Paper. Price, 50 francs. Pp. 415. Paris: Masson & Cie, 1935.

The first part of this ninth and last volume of *Thérapeutique médicale* deals with general therapeutics. It includes chapters on vaccination, serotherapy, bacteriotherapy, chemotherapy, protein therapy and hemotherapy. The second part, special therapeutics, contains articles on disinfection (L. Tanon), treatment of dysenteries (M. Dopter), prevention and cure of tetanus (L. Bazy), treatment and prevention of influenza—"la grippe"—(R. Dujarric de la Rivière), general principles of treatment of malaria (P. Abrami), bismuth treatment and bismuth prevention of syphilis (C. Levaditi), antityphoid vaccination (A. Lemierre), inoculation against diphtheria with Ramon's antitoxin (R. Debré), vaccine therapy against diseases caused by filtrable viruses (A. Pettit), convalescent serums (P. Joannon), and treatment with vitamins in infectious diseases (E. Lesné). The book does not give a systematic discussion of the treatment of infectious diseases but presents a series of articles on selected topics with special reference to serums, vaccines and chemotherapy. Some of the articles are rather fragmentary. The only article provided with references to the literature is that by Levaditi on bismuth in the cure as well as prevention of syphilis. As a rule the tendency of the articles is conservative. The oral ingestion of antityphoid vaccine is held to be of such doubtful value that it is not recommended for practical use. In the article on prevention of diphtheria, no mention is made of the one dose method with alum precipitated diphtheria toxoid. The book does not contain any account of the treatment of scarlet fever with specific antitoxic serum or of its prevention by the injection of susceptible persons with the toxin of the scarlet fever streptococcus. There is no index—only a short general table of contents.

**A Textbook of Obstetrics for Students and Practitioners.** By Frederick C. Irving, A.B., M.D., F.A.C.S., William Lambert Richardson Professor of Obstetrics, Harvard University Medical School. Cloth. Price, \$6. Pp. 558, with 357 illustrations. New York: Macmillan Company, 1936.

This is an extensive elaboration of outlines used in the teaching of students in the Harvard Medical School. The author purposely avoided making the book embrace the entire field of obstetrics. All the illustrations except the reproductions of roentgenograms are simple drawings. Many have been reproduced from other textbooks. All except the roentgenograms are clear and instructive. The book is divided into the conventional chapters. The analgesic which the author prefers is pentobarbital in combination with scopolamine. In the discussion of postpartum care the impression is given that the examinations made six weeks post partum is the final contact between the physician and an obstetric patient. This is unfortunate, because women who have given birth should not be discharged when the baby is 6 or 8 weeks of age but should be seen at least twice more during the first year following confinement and if possible once a year thereafter. Septic abortion is treated conservatively at the Boston Lying-in Hospital, just as it is in most large clinics in this country. In the treatment of placenta praevia a low maternal mortality has been secured by conservative means; but, because the fetal death rate has been high, the author has decided to be more liberal in his indications for cesarean section provided the risk to the mother is not thereby increased. In some large clinics, such as those of De Lee and Bill, large series of cesarean sections have been performed for placenta praevia with low maternal and relatively low fetal death rates. Irving also favors conservatism in the treatment of premature separation of the placenta. He divides the toxemias of late pregnancy into preeclampsia and eclampsia and advocates conservative therapy for both conditions. At the Boston Lying-in Hospital, three types of cesarean section are performed: the classic, the lower segment and the extraperitoneal. The death rate from all causes among 1,025 such operations was 3.7 per cent. The book is well written and is based chiefly on the author's extensive experience as an obstetrician and teacher. Students and practitioners should find this book helpful.

**Gynecology for Students and Practitioners.** By T. Watts Eden, M.D., C.M., F.R.C.P., Consulting Gynecologist, Charing Cross Hospital and Chelsea Hospital for Women, and Cuthbert Lockyer, M.D., B.S., F.R.C.P., Consulting Gynecologist, Charing Cross Hospital. Fourth edition. By H. Beckwith Whitehouse, M.B., M.S., Ch.M., Professor of Midwifery and Diseases of Women, University of Birmingham. Cloth. Pp. 964, with 655 illustrations. London: J. & A. Churchill, Ltd., 1935.

This heavy book of nearly a thousand pages is the fourth revision of gynecology originally written by Eden and Lockyer. It is now edited for the first time by H. Beckwith Whitehouse, who has brought it down to date not only by revision but also by rewriting several sections of the work, with the addition of considerable new material. This, and the profusion of illustrations, account for the size of the volume. The book is truly encyclopedic in its scope, being somewhat too complete, in fact, to be altogether readable. Some of its chapters are quite brisk in their style, however, and as a reference work it is admirable. Plates in color, half-tone drawings in black and white, line drawings by pen and ink, retouched photographs, and photomicrographs follow one another in such generous profusion that only a few pages lack one or the other in elaboration of the text. Many of these illustrations are excellent, but others are disappointing because they are apparently so old. The newer additions are by far the most satisfactory. The book is written and arranged in a style to which American readers are not entirely accustomed. The thoroughness with which the subject of gynecology is covered is characteristically British, although it is perhaps slightly bewildering to us in its meticulousness of detail. Whitehouse has added a timely section on the physiology of the female sex organs which is a companion to his chapters on functional disturbances and sterility. He has entirely rearranged the subject matter of the earlier editions by deliberately omitting as much as possible of symptoms and physical diagnostic signs from those portions of the book wherein he deals with etiology, clinical pathology, and the general nature of various gynecologic disorders. Then, toward the end of the book he groups and presents, rather uniquely, these previously deleted facts in an excellent section on gynecologic diagnosis and treatment. This is followed closely and logically by one on operative technic and another on post-operative treatment. Its having been edited and rewritten by a single authority has made possible the avoidance of the all too common faults of duplication and repetition. Its size is due solely to its being so comprehensive. The very completeness of this work recommends it as valuable to the library of the student, practitioner or specialist in gynecology.

**Modern Ophthalmic Lenses and Optical Glass.** By Theo. E. Obrig, A.B., Secretary, Gall & Lemke, Inc. Cloth. Price, \$4.50. Pp. 323, with 168 illustrations. New York: The Author, 1935.

In the preface to this valuable little treatise the author says that "an effort has been made to present the subject matter in as simple and concise a manner as possible." He has succeeded admirably in fulfilling his task. The history and an acquaintance with the story of optical glass and eye glasses should be of interest not only to the ophthalmologist and his helper the optician but indeed to every lay person, for each must be aware of the fact that, around the age of 45 or before, spectacles are a necessity in counteracting the loss of accommodation which nature imposes on all human beings. The enormous amount of effort and expense consumed in bringing the crude sand to form a scientifically perfect lens is stressed by the author, thus giving a real insight into the whys and wherefores of the necessity for exactness and the cost of the finished product. The difficulty with becoming accustomed to the bifocal lens is thoroughly discussed, and each of the many types now in use has its advantages and disadvantages well presented. Those modern ocular instruments which have been evolved to aid persons with poor sight, such as the contact lenses, the telescopic spectacles and the isekonic lenses to equalize the visual images of the two eyes, are considered in a manner most commendable. By directing attention to the protective lenses of color and those nonshatterable, the worker in hazardous occupations is apprised of the means at hand to prevent injury to the eye, which stands first in the list of causes of blindness. So too the worker in special fields in which it is desirable to have various focal distances because of the nature of the labor has demonstrated to him the value and defects of multifocal

lenses. The means at hand to include prismatic effects in eye glasses to compensate for ocular muscle difficulties and thus overcome double vision, vertigo, dizziness and the like is set forth in a masterful manner. Proper emphasis of the adjustment of the properly made lens in its relation to its position with regard to the eye is elucidated. If any derogatory criticism is indicated, it is a fault in the illustrations, the figures in many being so small and indistinct as to be illegible. The "desire to present a short reference book which gives the elementary facts we should all know, about the history of glass, the manufacture of glass, colored lenses and the reasons for their need" has been carried out by the author in a thorough and simple manner.

**Recent Advances in Cardiology.** By Terence East, M.A., D.M., F.R.C.P., Physician, King's College Hospital, London, and Curtis Bain, M.C., D.M., M.R.C.P., Physician, Harrogate General Hospital. Third edition. Cloth. Price, \$5. Pp. 350, with 99 illustrations. Philadelphia: P. Blakiston's Son & Co., Inc., 1936.

The first edition of this work appeared in 1929. In a sense the title is a misnomer. The volume is really a small textbook on cardiology largely made up of material so old that it cannot be classed as recent. This was also true of the second edition of 1931. The authors have, however, included a judicious selection from the newer facts concerning heart disease and in so doing have really rewritten the book. Two new chapters have been added, one on vascular diseases and one on congenital defects. The book can be recommended as a reliable, though by no means complete, work on disease of the heart, useful for the student who may be cramming for an examination or for the busy practitioner who wishes to brush up with a bird's-eye view of the subject. It is not, however, a work of reference or of study for one desiring thorough knowledge or who aims to qualify as a specialist in this field of practice.

**Blutkörperchensenkung.** Von Dr. Hans Relchel, Facharzt für innere Medizin, I. Med. Klinik in Wien. Unter Mitarbeit von Dr. P. Fasal et al. Paper. Price, 18 marks. Pp. 261, with 30 illustrations. Vienna: Julius Springer, 1936.

This textbook emanates from the First Medical Clinic of Vienna. It gives a complete story of the nonspecific test known as the blood sedimentation test. It shows the application of this test in diagnosis, prognosis and treatment. This is a complete account of the literature that has appeared in the last sixteen years. In addition, the author gives his experiences and conclusions based on a study of about 8,000 patients in the First Medical Clinic of Vienna, 3,000 of whom have been studied in the past year and a half. The technic of the method is completely set forth, together with its theory and physiology, and its bearing on general and experimental pathology, internal medicine, pediatrics, surgery, gynecology and obstetrics, skin, the sexual organs, the nervous system, ocular appearance, nose, throat and ear, as well as a special chapter on veterinary medicine, all of which tells the complete story of just how useful blood sedimentation is in medical practice. The author deserves great credit for assembling this literature and for having so painstakingly given his point of view based on an enormous personal experience. It is a valuable book for reference.

**A Textbook of Roentgenology: The Roentgen Ray in Diagnosis and Treatment.** By Bede J. Michael Harrison, M.B., Ch.M., D.M.R.E., Director of Department of Roentgenology, Vancouver General Hospital. Cloth. Price, \$10. Pp. 826, with 238 illustrations. Baltimore: William Wood & Company, 1936.

In the introductory chapter the author announces that this book is addressed not to roentgenologists but to general clinicians and is intended primarily to enable the practitioner to understand the basis on which roentgenology rests, so that he may better comprehend its applications and limitations. To this end the author has striven to correlate morbid anatomy with roentgenology. Hence in the discussion of individual diseases the pathology is described first, and this is followed by a summary of the roentgenologic manifestations and the therapeutic effects of irradiation. Because the author's purpose, to which he has applied himself with obvious enthusiasm, is praiseworthy, and because clinicians can scarcely fail to profit from reading the volume, it is with reluctance that any adverse criticisms are offered. The chapters on the nature of roentgen evidence, on inflammation and on infection are excellent, but,

although the morbid anatomy of individual diseases is set forth with meticulous detail, the link with the roentgenologic phenomena is too often not pointed out specifically. Illustrative roentgenograms with analytic explanatory legends would have helped to show the link, but the number of illustrations is insufficient, legends are terse, and many common disorders are not illustrated at all. Especially regrettable are the incautious statements concerning the effectiveness of radiotherapy for certain disorders, such as gallstone colic, malfunctioning gastroenterostomy, traumatic epilepsy, and feeble-mindedness in children, for few experienced radiologists would recommend irradiation for these conditions. Similarly, in some instances the criteria of diagnosis include items that are of doubtful validity. In short, the book seems to be a compilation of material drawn from many sources without the judicious discrimination that follows wide experience.

*Études expérimentales récentes sur les maladies infectieuses.* Par Jean Troisier, professeur agrégé de pathologie expérimentale et comparée à la Faculté de médecine de Paris. Paper. Price, 45 francs. Pp. 279, with 50 illustrations. Paris: Masson & Cie, 1935.

In the first part of this book the following diseases are grouped together because they appear to be caused by specific agents of as yet undetermined nature: fowl sarcoma (Rous), inguinal lymphogranuloma (in French *maladie de Nicolas-Favre*, lymphogranulomatosse bénigne), yellow fever, influenza and coryza ("common cold"), vaccinal encephalitis and common jaundice (l'ictère commun). The second part includes spirochetosis *icterohaemorrhagica* and its meningeal variant, apparently a new nosologic entity first recognized and described by the author of this book and his associates (Troisier, Jean, and Boquien, Yves: *La spirochetose méningée*, Paris, Masson et Cie, 1933, reviewed in *THE JOURNAL* Sept. 2, 1933, p. 803), visceral leishmaniosis, and la fièvre buttonneuse, a typhus-like disease so far found mainly in the Mediterranean basin and caused by a form of *Rickettsia*. The third part takes up typhoid and paratyphoid fevers, tularemia, swine erysipelas, brucellosis of bovine origin, tetanus, and gas bacillus (*Clostridium Welchii*) septicemia (in French *septicémie à Bacillus perfringens*). The next part reviews leprosy and certain forms of tuberculosis. The relations of human to rat leprosy are discussed in detail. The forms of tuberculosis considered are tuberculous infection by way of cutaneous inoculation and the septicemic form known in French as *la typho-bacilliose*. The two remaining parts deal briefly with agranulocytosis and with "virus néphrotropes"—infectious agents of various kinds that have a special affinity for renal tissue. The illustrations are good. The style is clear and concise. Many authors are cited in the text without any reference being given to their publications. Of misspelled names may be noted Brill for Bull, Huddlesen for Huddleson, MacCoy for McCoy and Wallgreen for Wallgren. As usual in French books of this general type, there is no index—only a table of contents.

*Twentieth Century Psychiatry: Its Contribution to Man's Knowledge of Himself.* By William A. White, M.D., A.M., Sc.D. Cloth. Price, \$2. Pp. 198. New York: W. W. Norton & Company, Inc., 1936.

This is the second Thomas W. Salmon memorial lecture to be published. It is divided into an introduction and three chapters on psychiatry as a medical specialty, the social significance of psychiatry and the general implications of psychiatric thought. In the introduction the author discusses and describes the history of psychiatry from the time of Pinel. He feels that practically all the changes in our ideas regarding psychiatry have occurred in the last fifty years. In the first chapter he discusses psychoanalysis and mental hygiene. He pleads for more research and constructive criticism for psychoanalysis. In the second chapter he discusses the social aspect and significance of mental disease in relation to federal and state budgets, relations of the individual to his community, and the social significance of his conduct and mental disorder. In the third chapter he emphasizes the tremendous growth of science during the present century and the extent to which psychiatric thinking has developed and become amalgamated with the advances in thought in all directions which directly or indirectly affect man and his activities. This is a popular publication and is recommended to all neuropsychiatrists. The author mentions about twenty-five books and publications used for references.

*Principles and Practice of Preventive Medicine.* Edited by C. W. Hutt, M.A., M.D., M.R.C.P., and H. Hyslop Thomson, M.D., D.P.H., Medical Officer of Health for the County of Hertford. In two volumes. Cloth. Price, £3 13s. 6d. Pp. 1,638, with 215 illustrations. London: Methuen & Co., Ltd., 1935.

In presenting these volumes Dr. Thomson calls attention to the untimely death of Dr. C. W. Hutt, who died while the book was going through the press. The two volumes constitute a system of preventive medicine to which many leading authorities of Great Britain have contributed. The first volume is concerned with prevention of infectious, the control of insects and vermin, and the hygienic problems involved in the control of food and water supplies. It concludes with a chapter on the disposal of the dead. The second volume proceeds to consider such topics as air, climate, housing, ventilation, lighting, smoking, maternal and infant welfare, industrial medicine, the hygiene of aviation, popular education in health, and many other modern topics. Although the books are peculiarly British in their approach to the subjects concerned, they advance many interesting suggestions for American and other readers. There is an extensive index which makes easy consultation of this valuable reference work on many hundreds of topics. The scope of the work is an indication of the tremendous advance that has taken place in preventive medicine during the past fifty years. The publishers have done a magnificent job of printing, using a thin enameled stock which lends itself beautifully to illustration and which permits a great number of pages of information in a small bulk. It is not possible in the scope of a review such as this to consider item by item the great field covered. The repute of the editors and of the individual authors is sufficient indication of the reliability of the material.

*The Mayo Clinic.* By Lucy Wilder. Cloth. Pp. 82, with illustrations by Ruth Barney. Rochester, Minnesota: The Author, 1936.

This volume is obviously published *con amore* about the origin, growth, development and present status of the Mayo Clinic. The book is the work of Lucy Wilder, wife of Dr. Russell M. Wilder. It is artistically designed with drawings and maps, artistically developed pages with inset sketches, and for any one who has been to the Mayo Clinic or who wishes to know in brief about it a useful book as well as a pleasing memento. The story of the Mayo Clinic is given in three chapters entitled "The Past," "The Future" and "The Present," and the volume concludes with the letter from Dr. William J. Mayo to the University of Minnesota establishing the Foundation—a document which is already historically epoch making because of its purpose and its statement of the aims of wealth.

*Proceedings of the National Conference of Social Work [Formerly National Conference of Charities and Correction] at the Sixty-Second Annual Session Held in Montreal, Canada, June 9-15, 1935.* Cloth. Price, \$3. Pp. 748. Chicago: The University of Chicago Press, 1935.

The papers presented at this conference show an almost complete transformation in social work and its treatment during recent years. The discussion of broad social problems now takes a prominent place. Even the technical discussions center around recent legislation, such as the Social Security Act and emergency relief measures. Much attention is given to "group work" and its relation to problems of social change. H. M. Cassidy, director of social welfare for British Columbia, describes the newly adopted system of health insurance in British Columbia. In the papers dealing with medical social work the necessity of medical leadership is stressed, something often overlooked in carrying out recent health programs.

*Elementary Bacteriology.* By Joseph E. Greaves, M.S., Ph.D., Professor of Bacteriology, Utah Agricultural College, Logan, and Ethelyn O. Greaves, M.S., Ph.D. Third edition. Cloth. Price, \$3.50. Pp. 562, with 147 illustrations. Philadelphia & London: W. B. Saunders Company, 1936.

This was written to furnish a suitable textbook for courses in elementary bacteriology. The hope that it might also prove of interest to nurses, home demonstrators, agricultural and home economic workers and to an ever increasing multitude of readers who are turning from fiction to facts was also expressed. It is simply and entertainingly written. At times the intention of writing simply and entertainingly has led to a somewhat careless method of expression, such as the reference to "T. B." in the introduction. The book would scarcely serve as a text-

book for medical students, but most of it could be read easily by intelligent persons without special scientific training. It might also serve as a useful addition to other textbooks in college courses of general bacteriology. The index is not complete, especially with regard to the authors referred to in the text. It would be helpful in later editions to improve this index. The chapters on milk and milk products, the nitrogen cycle and the carbon cycle are especially interesting. The classification of bacteria is rather too complicated for the rest of the book and its probable readers.

*Kolloid-Fibel für Mediziner.* Von Dr. Dr. Raphael Ed Llesegang, Institut für Physikalische Grundlagen der Medizin, Frankfurt a. M. Paper. Price, 1 mark. Pp. 34. Dresden & Leipzig: Theodor Steinkopff, 1936.

This "Colloid Primer" by one of the foremost authorities on colloids, shows that it takes a master to present a complex subject simply. He chiefly intends this "primer" as a stimulus to the reading of more extensive books. While the reading of this book can be chiefly recommended to one to whom this field is new, its perusal will pay the teacher, as it will enrich his vocabulary with helpful metaphors and similes. "Protective colloid" is "likened to a defensive armor." Soap acts by "one end of its long molecule projecting into the oil (the disperse phase) and the other end sticking out into the water." Each cell is "a mosaic of somewhat more acid and mere alkaline places" and its "membrane, a mosaic of lipoids and of water swelled protein, so that it is permeable to both."

## Miscellany

### OXYGEN ADMINISTRATION

The Committee on Public Health Relations of the New York Academy of Medicine was requested to prepare a memorandum with information concerning the administration of oxygen. The need for this, according to the request, arose from the fact that there are on the market oxygen tents which are not only inadequate but may be a source of actual danger to the patient.

Evidence has come to hand which indicates that oxygen therapy is frequently administered in a wasteful and ineffective manner not only in private practice but also in the wards of hospitals.

#### REGULATION OF OXYGEN CONCENTRATION

The purpose of oxygen therapy is to overcome oxygen want due to some interference with proper oxygenation of the blood, as in pneumonia, coronary thrombosis, congestive heart failure, emphysema or atelectasis. In the presence of fever the metabolism is increased and the oxygen want is thereby increased. If the patient is to be benefited, the amount and concentration of the oxygen employed must be sufficient to compensate for the impairment in the oxygen exchange. It is important that the physician prescribe definitely the concentration of oxygen to be breathed by the patient, just as he prescribes the dose of drugs. The optimum range of oxygen concentration will vary in different patients. In some cases 30 per cent will be adequate to correct the deficiency; in other instances as high as 70 per cent may be required. Continuous use of pure oxygen is harmful, but for periods not exceeding eight hours of the twenty-four a concentration as high as 90 per cent has been found safe. In many cases from 45 to 50 per cent is the most desirable concentration.

A 35 per cent concentration of oxygen in the alveolar air may be achieved by means of a forked nasal tube inhaler or a simple nasal catheter and an oxygen flow of 5 liters per minute. By increasing the flow, even higher concentrations may be obtained. The administration of concentrations between 50 and 70 per cent is in most instances more satisfactorily obtained by the employment of an oxygen tent. The tent also permits air conditioning.

#### TESTING THE OXYGEN TENT PERIODICALLY

If the tent is to fulfil its purpose, it must be able to maintain the desired oxygen concentration. The possibility of leaks developing in the unit is so great that no tent should ever be used unless its oxygen content is tested at least two to three

times a day and the results of the test recorded. The testing is so simple and yet so essential that no physician should ever employ a tent in his private or hospital practice unless provision is made for periodic testing of the oxygen concentration. This test should not be made immediately after the tent has been filled with oxygen. If the circulation is directly through the ice it takes an hour for the concentration of oxygen to be restored to its former height, unless after the icebox is opened the flow rate of oxygen is increased temporarily. The blower should be stopped when ice is added or inspected.

#### OXYGEN TENT THERAPY FOR ADULTS

In addition, three other important conditions must be met. 1. For adults a tent should have a capacity of at least 8 cubic feet. 2. The temperature inside the tent should be maintainable at the desired temperature by means of a cooling device. In most patients with fever a temperature between 58 and 68 F. is preferred in winter and a slightly higher temperature in summer. Higher temperatures are often desirable for older people and infants. 3. The relative humidity should be maintained between 40 and 60 per cent. When tents are ventilated by a motor blower circulation which passes the air over a cooling medium such as ice, the humidity will usually be within this range. If the temperature and humidity are not maintained at these comfort levels, the patient will be distressed and the tent will do much more harm than good. The nurse should be instructed to observe and record the temperature within the tent throughout the day and night, or the temperature and humidity may be recorded by an automatic recording device. If the temperature goes above 70 F. it generally indicates that there is inadequate cooling and frequently inadequate removal of moisture. This may be due to inadequate circulation of air or inadequate provision for cooling.

The carbon dioxide content should not be more than 1.2 per cent. If a minimum flow of 8 liters of oxygen per minute and an oxygen concentration of 50 per cent are maintained, harmful accumulations of carbon dioxide within the tent will not take place even in the absence of soda lime. If lesser rates of oxygen flow and higher concentrations of oxygen are maintained especially for adults with fever, soda lime should be used. Because there is no valid indication for continuous stimulation of the respiratory center, mixtures of carbon dioxide and oxygen are not required for most illnesses. For short periods, such stimulation may be of value in such conditions as carbon monoxide poisoning, drowning, electrical shock, atelectasis of the newborn, and when there is shallow breathing.

Tents which are not equipped with a satisfactory method for cooling and drying the air may be detrimental to the patient and may cause death by heat stroke. No closed canopy should be put over a patient's head unless it is equipped with a cooling and dehumidifying apparatus. Tents without blowers are unsatisfactory in certain climatic regions.

#### OXYGEN TENT THERAPY FOR INFANTS

The same general principles apply to tents for infants, except that higher temperatures, and in some instances higher humidities, should be prescribed for very small infants. Smaller tents may be used. It is dangerous to deprive infants of heat by rapidly circulating cool air over them. A tent with an aperture at the top, and to which the oxygen is admitted at the base, may be used provided it is not placed near an open window or door where air currents may draw out the accumulated oxygen. The oxygen concentration should be tested and recorded. An umbrella or canopy tent without an air conditioner may be used for infants under 2 months of age, since such infants produce insufficient heat, water or carbon dioxide to permit harmful accumulation of these metabolites.

#### STERILIZATION OF THE TENTS

All tents should be sterilized after each use by scrubbing inside as well as outside with soap and water. The tents should therefore be made of double-faced material. After scrubbing, the tent should be dipped in a solution of 1:10,000 mercury bichloride for five minutes. To prevent incrustation, the tent should be washed down with water after immersion in the mercury bichloride. In hospital practice an alternate method would be the dipping of the tent in a 70 per cent solution of ethyl alcohol for five minutes.



## FIRE HAZARDS

1. All tents should be conspicuously stamped "No Flames, No Sparks, Danger."
2. Oxygen gages should be conspicuously labeled "Danger, Do Not Oil."
3. For the window of the tent, only cellulose acetate or other noninflammable material may be employed. Cellulose nitrate or celluloid should never be used because they are extremely inflammable and form dangerous fumes.

## NASAL CATHETER OR NASAL TUBE ADMINISTRATION

There are several effective methods of administering oxygen through the nose, employing a nasal catheter or nasal tube inhaler with a calibrated gage to fit on a high pressure tank. The oxygen must be passed through at least 3 inches of water to prevent drying the mucous membrane.

1. A metal nasal tube inhaler with soft rubber tips that just enter each nostril may be employed.

2. A nasal catheter may be inserted into the nostril for a distance of approximately 3 inches; i. e., up to but not touching the posterior wall of the nasopharynx. Five liters of oxygen generally provides 35 per cent oxygen in the inspired air. A single catheter may be changed from one nostril to the other if irritation should occur. With a double nasal catheter a slightly increased oxygen concentration is obtained at the same rate of flow. The terminal one inch of the catheter should be perforated with four holes in order to prevent a stream of oxygen impinging on one localized area of mucous membrane. The size of the catheter may be a No. 12 French or a somewhat larger caliber if it does not occlude the nasal passage completely.

3. The catheter may be employed in the oropharynx opposite the uvula. When it is used in this position, caution must be exercised lest oxygen be passed into the stomach. The catheter should not be placed lower than the uvula. The throat should be sprayed every eight to twelve hours to prevent drying.

Whereas 4 or 5 liters per minute of oxygen is generally used with the nasal catheter or nasal tube inhaler, higher rates of flow up to 12 liters per minute may be employed if no sensation of discomfort is produced. With the higher rates of flow, larger catheters are required. When catheters are employed it is important to make additional holes in the terminal one inch.

## OXYGEN REGULATOR AND GAGE

Oxygen should be employed in high pressure tanks containing 220 cubic feet, or 6,000 liters. There is only one kind of oxygen, industrial oxygen. There is no special "medical" oxygen.

The flow regulator should have two gages, one to indicate the amount of oxygen in the cylinder, and the other to indicate the rate of flow in liters per minute. A variable orifice or float gage indicates the amount of oxygen actually flowing and is accordingly to be preferred to a dial gage which records the pressure against a fixed orifice as liters per minute. The latter type does not indicate that the oxygen flow may have stopped or has been diminished. Bourdon tube type gages, as well as the pitot tube type gages, should be tested from time to time by measuring the rate at which the spirometer of a metabolism apparatus is filled at standard pressure and temperature.

## CONCLUSIONS

This statement emphasizes:

1. The effectiveness of the nasal inhaler or nasal catheter.
2. The value of a tent for administering high concentrations of oxygen.
3. The desirability of prescription by the physician of the concentration of oxygen in the oxygen tent.
4. The necessity for repeatedly testing and recording the oxygen concentration within the tent.
5. The necessity for observing the temperature and humidity constantly while the tent is in use.
6. The danger to life involved in employing a tent in which an optimum oxygen concentration is not maintained and in which the temperature and humidity are not observed and controlled.

April 6, 1936.

## Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Chiropractic: Injections for Cancer Illegal; Scope of Chiropractic in California.**—Hartman, a licensed chiropractor in California, was convicted in the justice's court of San Bernardino township, on a complaint charging him with, among other things, (1) the unlawful possession of a hypodermic syringe and needle in violation of sec. 8 (e) of the poison act,<sup>1</sup> and (2) a violation of the medical practice act by practicing medicine without a license. The case was submitted on an agreed statement of facts. Thereafter Hartman appealed to the superior court which affirmed the judgment of conviction, and Hartman made application for a writ of habeas corpus to the district court of appeal, fourth district, California.

In the agreed statement of facts, Hartman admitted that he had in his possession a hypodermic syringe and that he treated cancer "according to the 'Koch' method, by injection of a fluid called 'antitoxin' or split-protein." It was agreed that this method of treating cancer was taught in chiropractic schools and colleges in the state. Hartman contended that his method of practice was authorized by sec. 7 of the chiropractic act of California, which authorizes a licentiate—

to practice chiropractic in the state of California as taught in chiropractic schools or colleges; and, also, to use all necessary mechanical, and hygienic and sanitary measures incident to the care of the body, but shall not authorize the practice of medicine, surgery, osteopathy, dentistry, or optometry, nor the use of any drug or medicine now or hereafter included in materia medica.

The contention was that since the use of the hypodermic syringe and needle and the diagnosis and treatment of cancer by the use of an injection of "antitoxin" were taught in chiropractic schools in California, Hartman was practicing within lawful limits. He further sought to justify the use of the hypodermic syringe by contending that it was merely a measure "incident to the care of the body." The use of the hypodermic syringe, said the district court, cannot be held to be merely a measure "incident to the care of the body," within the meaning of the chiropractic act, because the phrase "incident to the care of the body" refers to general hygienic and sanitary measures, even though mechanical, and not to the treatment of diseases and ailments, and because of the limitations imposed that licentiates shall not be authorized to practice medicine or surgery. The section dealing with the authorized scope of chiropractic must be read as a whole. It cannot be construed as authorizing a licentiate to do anything and everything that might be taught in a chiropractic school. A short course in surgery, or one in law, might be given, but it would not follow that a licensed chiropractor might engage in such other professions. It is not sufficient that a particular practice be taught in a chiropractic school; the practice must constitute a part of chiropractic and must not violate the provision expressly forbidding licentiates from practicing medicine. If a particular practice is not a part of chiropractic, but does constitute the practice of medicine, a chiropractic licentiate may not engage therein, even though it may be taught in a chiropractic school.

The court was unable, however, to determine from the agreed statement of facts whether the method of treatment here in question was or was not a part of the practice of chiropractic. The failure of the petitioner, Hartman, to include in the record that was before the district court all the evidence made it impossible for that court to pass on the sufficiency of it. Furthermore, the rule is well established that the sufficiency of the evidence may not be reviewed in a habeas corpus proceeding. Even if we could properly review the evidence, the court said, there was none in the record which would support a finding that the use of a hypodermic needle or the injection of an "antitoxin" is a part of chiropractic, and no evidence

1. This section provides, in part, that it shall be unlawful for any person other than a physician and surgeon, dentist, registered nurse, veterinarian, or pharmacist licensed to practice in California to have in his possession a hypodermic syringe unless it was purchased on a written order signed by a duly licensed physician, dentist, or veterinarian or by a person holding an unrevoked license to practice osteopathy.

that such forms of treatment do not constitute the practice of medicine. The court held, therefore, that the petitioner was not entitled to be released from custody. *In re Hartman (Calif)*, 51 P (2d) 1104

**Malpractice: Chiropractor's Malpractice Provable Without Expert Testimony.**—The plaintiff consulted the defendant, a chiropractor, relative to pains in her face. The defendant diagnosed her condition as "tic douloureux, inflammation of the fifth cranial nerve." Although this nerve is in no way connected with any portion of the vertebrae, the chiropractor, during the course of treatment of the patient's ailment, fractured her twelfth rib while adjusting her vertebrae in that region. The patient sued the chiropractor, and the trial court, sitting without a jury, entered a judgment in her favor. The chiropractor then appealed to the district court of appeal, second district, division 2, California.

The sole question before the court was: In case a chiropractor has prescribed treatment for a specific ailment and injures an undiseased portion of his patient's body in no way related to the ailment, may the court, in the absence of expert testimony, properly find that the chiropractor negligently injured his patient? The negligence of a chiropractor, said the district court of appeal, in failing to take due care to avoid injury to undiseased parts of his patient's body may be proved without resorting to expert testimony. The finding of the trial court, based on substantial evidence other than expert testimony, that the patient suffered injuries to an undiseased portion of her body as the result of the defendant's negligence was held to be binding on the appellate court.

The judgment in favor of the patient was therefore affirmed. —*Morrison v Lane (Calif)*, 52 P (2d) 530

**Health Insurance: Total Permanent Disability Defined.**—"Total disability," said the Court of Appeals of Kentucky, does not mean utter helplessness and "permanent disability" does not mean utter hopelessness. A man to be totally and permanently disabled does not have to be reduced to a state wherein he is entirely dependent on others and is absolutely without hope of improvement. In *McNally v United States*, 52 Fed (2d) 440, the United States circuit court of appeals, in defining the term "total permanent disability," said that it does not mean "absolute incapacity" but such "impairment of capacity as to render it impossible for the disabled person to follow continuously any substantially gainful occupation." In the present case the insured, 60 years of age and suffering from heart disease, was held to be totally and permanently disabled, although he attempted to obtain work and actually did work for about twenty days during a period of two years. The sacrifices some men will make, the dangers they will undergo to feed their families, are, said the Court of Appeals, often beyond comprehension. In determining the rights of men, however, the standard of unusual examples should not be used. What the average reasonable man would do under the circumstances is the criterion.—*Actna Life Ins Co v Gullett (Ky)*, 89 S W (2d) 1

**Hospitals, in General: Admissibility of Records in Evidence.**—Plaintiff sued the defendant to recover damages for personal injuries sustained in an automobile accident. At the trial, the court refused to admit in evidence, at the request of the defendant, the hospital records of the plaintiff. The jury returned a verdict for the plaintiff and the defendant appealed to the Supreme Court of New Hampshire, contending that the trial court erred in declaring inadmissible in evidence the hospital records.

Although a liberal rule in regard to the admissibility of entries made in the regular course of business prevails in New Hampshire, said the court, some proof of correctness is required before such entries can properly be submitted to a jury. Ordinarily, verification of the authenticity, regularity and correctness of such records by the official having them in charge would be the minimum of acceptable proof. Whether a record is sufficiently verified to justify its admission, however, is a preliminary question of fact for the trial judge to pass on. In the present case, the records were produced by a nurse who testified that she did not have the custody of the official records of the hospital "except in the absence of the

superintendent." She disclosed no knowledge as to the system or method in accordance with which the hospital records were kept, as to the identity of the persons who made the records in question or the duties of such persons with respect to the recording of facts therein. In short, said the court, no one testified that the records were correct. In view of these facts, in the opinion of the Supreme Court, the trial court committed no error in ruling that the records were inadmissible in evidence. A judgment was therefore rendered on the verdict for the plaintiff.—*Williams v Williams (N H)*, 182 A 172.

**Workmen's Compensation Act: Death from Botulism Compensable.**—Meyer was employed by the defendant Roettele to assist in operating a threshing machine, for which services he received daily wages and board. As a result of the ingestion of a noonday meal, Meyer became ill from botulism and died three days later. The claimants, the parents of Meyer, filed a claim under the workmen's compensation act of South Dakota and the commissioner awarded compensation. This award was affirmed by the circuit court, and the defendants appealed to the Supreme Court of South Dakota.

The workmen's compensation act of South Dakota authorizes an award of compensation "for personal injury or death by accident arising out of and in the course of employment." "Personal injury" is defined specifically to exclude "a disease in any form except as it shall result from the injury." The defendants contended that Meyer's death was due to a disease and that compensation for disease may be awarded only in case the disease is produced or aggravated by an injury caused by an unexpected event. The phrase "injury by accident," the defendants contended, should be construed so as to confine its application to instances in which the cause of the injury was accidental. A disease, said the court, may be an "injury by accident" and therefore compensable. If the element of suddenness or precipitance is present and the disease is not the ordinary or reasonably to be anticipated result of pursuing an occupation, it may be regarded as an injury by accident. The medical testimony was to the effect that the food poisoning and resulting death were caused not by the action of bacteria within the body but by a toxin created by the action of *Bacillus botulinus* on the food before it was ingested. There is no substantial distinction, the court said, between the consuming of this poisonous food and chemical poisoning or the drinking of a virulent poison by mistake. The inception of the disease was attributable to the unexpected and undesigned occurrence of the presence of the poisonous toxin and was assignable to a definite time, place and circumstance. The death was, therefore, the result of an "accidental injury." The mere fact, said the court, that an employee is not actually engaged at his work at the time of injury does not relieve the employer of liability. Under the terms of employment, in the instant case, board was furnished. Meyer was where his employer directed him to be, and, although the partaking of food was personal in character, nevertheless it was so incident to his employment that the accident arose out of and in the course of employment.

In the opinion of the court, however, the award was excessive. The judgment was therefore reversed and the case remanded with directions to enter judgment for the claimants for a lesser amount.—*Meyer v Roettele (S D)*, 264 N W 191

## Society Proceedings

### COMING MEETINGS

American Physiotherapy Association, Los Angeles, June 28 July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.  
Conference of State and Provincial Health Authorities of North America, Vancouver, B. C., June 22-24. Dr. A. J. Chesley, State Department of Health, St. Paul, Minn., Secretary.  
Maine Medical Association, Rangeley, June 21-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.  
Medical Library Association, St. Paul, June 22-24. Miss Janet Doe, 2 E 103d St., New York, Secretary.  
Montana Medical Association of Billings, July 8-9. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.  
North Pacific Pediatric Society, Victoria, B. C., June 24-25. Dr. M. L. Bridgeman, 1020 S. W. Taylor St., Portland, Ore., Secretary.  
Pacific Northwest Medical Association, Portland, Ore., July 8-11. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### American J. Digestive Diseases and Nutrition, Chicago

3: 83-148 (April) 1936

- Relation in Man Between Gastric Acidity and Height and Weight  
Frances R. Vanzant, W. C. Alvarez and J. Berkson, Rochester, Minn.—p. 83.
- \*New Clinical Concepts of Bacillary Dysentery Its Relationship to Nonspecific Ulcerative Colitis, Distal Ileitis and Nonspecific Granuloma.  
J. Felsen, New York—p. 86
- Studies on Constitution and Peptic Ulcer. I. Appetite Secretion in Normal Persons and in Ulcer Patients H. Necheles and M. H. Mashin, Chicago—p. 90
- Id. II. Dermographic Time of Peptic Ulcer Patients and Normal Subjects H. Necheles, M. H. Mashin and J. Meyer, Chicago—p. 92
- Study of Effect of Anoxemia on Pyloric Sphincter in Unanesthetized Dogs E. J. Van Liere and J. E. Thomas, Morgantown, W. Va., and Philadelphia—p. 94
- Studies of Pepsin in Human Gastric Juice. IV. Influence of Gastric and Duodenal Disease Frances R. Vanzant, A. E. Osterberg, W. C. Alvarez and A. B. Rivers, Rochester, Minn.—p. 97
- Id. V. Its Prognostic Value Frances R. Vanzant, A. E. Osterberg, W. C. Alvarez, E. S. Judd and A. B. Rivers, Rochester, Minn.—p. 101
- Effects on Gastric Juice of Man of Six Weeks' Deprivation of Vitamin B<sub>1</sub> W. C. Alvarez, F. Pilcher, Mary A. Foley, Annette Mayer and A. E. Osterberg, Rochester, Minn.—p. 102
- Roentgenographic Studies of Mucous Membrane of Colon. I. Normal Pattern. F. J. Lust and H. G. Jacoby, New York—p. 108
- Aluminum Hydroxide as Antacid in Peptic Ulcer. W. L. Adams, I. H. Emsel and V. C. Myers, Cleveland—p. 112
- Diverticula of Jejunum Report of Four Cases T. J. Jones and G. Crile Jr., Cleveland—p. 120
- Isochorectal Abscess Stage in Development of "Horseshoe" Fistula Case Report G. M. Landrock, Philadelphia—p. 122

**Relationship of Bacillary Dysentery to Colitis, Ileitis and Granuloma.**—Felsen wishes to show that acute bacillary dysentery, acute distal ileitis, chronic nonspecific ulcerative colitis, ileitis and nonspecific granuloma are but different stages of the same disease. He bases his data on a study of 317 cases of acute bacillary dysentery, eleven cases of acute distal ileitis, forty-two consecutive cases of nonspecific ulcerative colitis, eight with chronic distal ileitis, four with pseudopolypoidosis and two cases of nonspecific granuloma of the ileocecal region. Most of his patients with acute bacillary dysentery recovered completely in from ten days to two weeks. Acute distal ileitis appeared to subside, but in some cases the intestinal lesion persisted. Cases of acute bacillary dysentery lasting for more than three weeks appeared to persist by reason of a secondary nonspecific infection. Contact infection was demonstrated in six cases of nonspecific ulcerative colitis, suggesting that nonspecific ulcerative colitis is transmitted only during the initial stage of acute bacillary dysentery. In forty-two consecutive cases of nonspecific ulcerative colitis a diagnostic agglutination titer against *Bacillus dysenteriae* was obtained. A pathologic study was made of seven specimens of acute bacillary dysentery, eleven of acute distal ileitis, six of chronic distal ileitis, two of nonspecific granuloma and seven of nonspecific ulcerative colitis. The lesions in the chronic stage were identical with those seen in acute bacillary dysentery except that, owing to the long duration of the disease, extensive fibrosis and intramural infection were present. The former represented an attempt at healing and accounted for the loss of haustration and stenosis seen in chronic distal ileitis and nonspecific ulcerative colitis. Nonspecific granuloma of the ileocecal region represents a productive type of inflammation and, like chronic distal ileitis, almost always shows giant cells in the tissue sections. This condition may be erroneously diagnosed as tuberculosis, but tubercle

bacilli are absent and guinea-pig inoculation of the macerated tissue proves negative. While no case of amebic dysentery has been included in this study, it appears to the author that the same type of secondary nonspecific infection might occur. The ideal treatment of nonspecific ulcerative colitis and its related lesions appears to be the prevention of bacillary dysentery. Recognition of the typical and atypical forms of the disease, prompt isolation and careful epidemiologic surveys should lessen the incidence of the diseases known as nonspecific ulcerative colitis, chronic distal ileitis and nonspecific granuloma. Every patient with diarrhea or a history of diarrhea should be placed on typhoid precautions until proved free of *Bacillus dysenteriae*. Most patients with acute bacillary dysentery recover without any specific therapy. Supportive treatment may be used when indicated. The use of recently recovered cases as donors is suggested in the acute severe types of the disease. All patients with acute bacillary dysentery in whom the intestinal lesions persist for more than three weeks should be placed immediately on prophylactic D-C vaccine and antiviral therapy. In sporadic or epidemic outbreaks the widespread use of polyvalent dysentery vaccine should afford some degree of immunity before the patient becomes infected. This observation is based on a limited experience with human contacts and experimental animals. Some cases of nonspecific ulcerative colitis heal spontaneously, but most of them go on for years with periodic stages of remission and exacerbation. All that one can hope for in a case of long duration is subsidence of the infection. Toward this end the author uses the following therapy: (1) intestinal oxygenation, (2) D-C vaccine and (3) D-C antiviral. The organisms in the vaccine and antiviral include polyvalent strains of the specific dysentery (D) organism with which the patient was originally infected as demonstrated by the agglutination titer, and the two common secondary invaders, enterococcus and *Bacillus coli* (C). The vaccine and antiviral are administered every other day, the former in gradually increasing dosage after a preliminary skin test for sensitivity.

### American Journal of Physiology, Baltimore

115: 249-496 (April 1) 1936. Partial Index

- \*Cardiac Output in Standing Position. J. C. Scott, Philadelphia—p. 268.
- Position of Oxygen Dissociation Curve of Human Blood at High Altitude. A. Keys, F. G. Hall and E. S. G. Barron, Chicago—p. 292.
- Action of Heparin and Its Relation to Thromboplastin. A. J. Quick, Milwaukee—p. 317.
- Electrolyte Changes in Muscle During Activity. W. O. Fenn and Doris M. Cobb, Rochester, N. Y.—p. 345.
- Stellate Ganglions and Breathing. J. M. Brookhart, E. H. Steffensen and R. Gesell, Ann Arbor, Mich.—p. 357.
- Creatinuria Induced by Ingestion of Glucose and Fructose and by Exercise. J. Hald and G. Bachmann, with assistance of W. Wynn and J. M. Little, Emory University, Ga.—p. 364.
- Effect of Progesterin on the In Vitro Response of Rabbit's Uterus to Pituitrin. A. W. Makepeace, G. W. Corner and W. M. Allen, Rochester, N. Y.—p. 376.
- Gastric Secretagogic Value of Various Digestive Secretions. M. S. Kim and A. C. Ivy, Chicago—p. 386.
- Reflex Pathways Concerned in Inhibition of Hunger Contractions by Intestinal Distention. J. Lalich, W. J. Meek and R. C. Herrin, Madison, Wis.—p. 410.
- Metabolic Aspects of Thyroid Adrenal Interrelationship. S. B. Barker, J. F. Fazikas and H. E. Himwich, New Haven, Conn.—p. 415.
- Specific Dynamic Action of Protein in Pancreatic Diabetes. G. C. Ring, Boston—p. 419.
- Source of Blood Acetone Resulting from Administration of Ketogenic Principle of Anterior Hypophysis. I. A. Mirsky, Cincinnati—p. 424.
- Inhibitory Influence of Acidity of Gastric Contents on Secretion of Acid by Stomach. C. M. Wilhelm, F. T. O'Brien and F. C. Hill, Omaha.—p. 429.
- Relation of Pregnancy and Lactation to Extirpation Diabetes in Dog. F. P. Cuthbert, A. C. Ivy, B. L. Isaacs and J. Gray, Chicago—p. 480.

**Cardiac Output in Standing Position.**—Scott observed the cardiac output of a single individual in the recumbent, sitting and standing positions. During the winter season in the standing position high auriculoventricular differences are usually associated with high oxygen consumption; in the summer this relationship is reversed. The average standing cardiac output is lower than that of recumbent or sitting positions. The output is influenced by various undefined environmental factors under so-called basal conditions, particularly if the subject is standing.

**American Journal of Tropical Medicine, Baltimore**

16: 105-244 (March) 1936

- Anopheles (Anopheles) Punctimaculata Naturally Infected with Malaria Plasmodia J S Simmons, Ancon, Canal Zone—p 105
- \*A Fifth Year's Observations on Malaria in Panama, with Reference to the Failure of Atabrine to Control an Epidemic W H W Komp and H C Clark, Panama City, Republic of Panama—p 109
- Occurrence of Gametocytes of Plasmodium Vivax During Primary Attack M F Boyd, W K Stratman Thomas and H Muench, Tallahassee, Fla—p 133
- Acquired Immunity to Plasmodium Falciparum M F Boyd W K Stratman Thomas and S F Kitchen, Tallahassee, Fla—p 139
- Evidence of Binary Fission of Ring Forms in Plasmodium Vivax Grassi and Feletti T de Vinne Beach New Orleans—p 147
- Duration of Infectiousness in Anophelines Harboring Plasmodium Falciparum M F Boyd, W K Stratman Thomas and S F Kitchen Tallahassee, Fla—p 157
- Relative Susceptibility of the Inland and Coastal Varieties of Anopheles Crucians Wied to Plasmodium Falciparum Welch M F Boyd, S F Kitchen and J A Mulrennan, Tallahassee, Fla—p 159
- Further Studies on Transmission of Trypanosoma Hippicum Darling by Vampire Bat Desmodus Rotundus Murinus Wagner C M Johnson, Panama City, Republic of Panama—p 163
- Diendamoeba Fragilis Cause of Illness Report of Case E G Hakansson, Panama City, Republic of Panama—p 175
- Distribution of American Leishmaniasis in Relation to That of Phlebotomus G C Shattuck, Boston—p 187
- Chemotherapy of Dirofilaria Immitis H G Johnstone, San Francisco—p 207

**Failure of Atabrine to Control an Epidemic of Malaria.**

—In presenting the observations made during the fifth consecutive year of studies on malaria in Panama, Komp and Clark state that none of the methods of treatment used in the preceding year were able to prevent or to check the course of an epidemic caused by subtertian parasites, which occurred during the first four months of 1935. This epidemic was a manifestation of the cyclic variations in malaria parasite rate which are characteristic of malaria in Panama. Increased knowledge of the local conditions has caused them to abandon the method used in the past, the attempt to reduce malaria incidence by treatment directed against the reservoir of malaria in young children and adolescents. They believe that more harm than good has been done by this method and that their objective to increase labor efficiency may be more easily obtained by treatment of clinical cases as they occur, atabrine being used as the drug of choice. Further evidence that a familial immunity to malaria may exist is presented, and, finally, some essential criteria which must be used in future experimental work are outlined.

**Annals of Internal Medicine, Lancaster, Pa.**

9: 1287-1452 (April) 1936

- The Changing Order in Medicine J A Miller, New York—p 1287
- Lymphopoiesis, Lymphatic Hyperplasia and Lymphemia: Fundamental Observations Concerning Pathologic Physiology and Interrelationships of Lymphatic Leukemia, Leukosarcoma and Lymphosarcoma B K Wiseman, Columbus, Ohio—p 1303
- \*Metabolism Studies in Myasthenia Gravis Before and During Administration of Glycine Mildred Adams, M H Power and W M Boothby, Rochester, Minn—p 1330
- \*Treatment of Addison's Disease with Sodium Compounds with Report of One Case and Summaries of Eleven Other Collected Cases Thus Treated E C Reifstein and E C Reifstein Jr, Syracuse N Y—p 1338
- \*Leukocyte Picture in Hodgkin's Disease Grace M Roth and C H Watkins, Rochester Minn—p 1365
- Interrelationship of Gastro Intestinal and Renal Disease H Gauss, Denver—p 1373
- Further Observations on Carotid Sinus Reflex L H Sigler, Brooklyn—p 1380
- Phosphatase Content of Human Serum in Pulmonary Tuberculosis Following Administration of Vitamin D P D Crium and J W Strayer, Evansville Ind—p 1393
- Diagnosis of Dissecting Aneurysm of Aorta E E Osgood, M F Gourley and R I Baker, Portland, Ore—p 1398
- Diet of Bluff Dwellers of Ozark Mountains and Its Skeletal Effects E G Wakefield, Rochester, Minn., and S C Dellinger, Fayetteville, Ark—p 1412

**Metabolism Studies in Myasthenia Gravis**—To gain information concerning the metabolism of patients with myasthenia gravis before and during the administration of aminoacetic acid Adams and her associates made studies of the food urine and feces of two subjects. In the first period (four days with no aminoacetic acid) for subject 1 the balances for nitrogen, sulfur, phosphorus, magnesium and calcium were close to equilibrium. Likewise during the second period, when

aminoacetic acid was administered for eleven days, there was remarkably little change in these balances. In a subsequent period during which the intake of food and aminoacetic acid was reduced, the balances continued to be much like those observed for the second period. Apparently there was a large retention of sodium in the first period, but this may be ascribed to the fact that the supplementary sodium chloride of the diet was not sufficiently accurately weighed during this period. The retention of sodium in the second period was 0.49 Gm daily, a value not abnormally high in view of the fact that no correction for loss of sodium through the skin could be made. The potassium balance in the first period appeared to be significantly negative. In the second period this balance became somewhat less negative. During the control period, subject 2 was in definite negative balance as regards nitrogen, sulfur, phosphorus and calcium but in approximate balance as regards potassium, magnesium and possibly sodium. During the administration of aminoacetic acid, the second period, the loss of nitrogen decreased but the balance was still highly negative. No marked changes occurred in the balances of the other constituents. The nitrogen distribution during the control periods was apparently normal for each subject, except for the presence of some creatine, a condition occasionally encountered in myasthenia gravis. During the periods of administration of aminoacetic acid there occurred in subject 1 a marked temporary retention of nitrogen for the first day or two. This was later excreted, however, and the average increase in the urinary nitrogen for the entire period was equivalent to 101 per cent of the nitrogen ingested as aminoacetic acid. For subject 2 the increase in the nitrogen of the urine was equivalent to only 81 per cent of the aminoacetic acid ingested. The increased urinary nitrogen was largely in the form of urea. Changes in the other nitrogenous constituents were relatively small and accordingly the nitrogen partition products remained essentially normal. The excretion of creatinine during the periods of administration of aminoacetic acid was unchanged as compared with the excretion during the control periods. Creatine, however, was excreted in definitely increased quantities. The increased excretion of urea, ammonia, creatine, uric acid and amino acids in the periods of administration of aminoacetic acid accounted satisfactorily for all the extra nitrogen appearing in the urine, 100 per cent and 99 per cent for subjects 1 and 2, respectively. The average undetermined nitrogen fractions, therefore, were not appreciably altered by aminoacetic acid and it appears that large amounts of unknown nitrogen-containing substances were not formed, although the possibility of alterations in the character of the undetermined nitrogen fraction cannot be excluded. The excretion of total sulfur and inorganic sulfate by subject 1 during administration of aminoacetic acid was roughly parallel to the excretion of nitrogen, while there was no change in the conjugated sulfate fraction. There was a small decrease in the excretion of total sulfur by subject 2, with a more marked decrease in the inorganic fraction. At the same time the conjugated sulfates increased considerably over the rather unusually low value of the control period. There were rather substantial increases in the excretion of neutral sulfur by both subjects. The excretion of phosphate by subject 1 was markedly increased on the first day of administration of aminoacetic acid but later returned to a level only slightly above that of the control period. The excretion of phosphate in the urine by subject 2 progressively decreased during the period of administration of aminoacetic acid. It seems impossible to conclude that there is any particular metabolic abnormality in myasthenia gravis.

**Treatment of Addison's Disease with Sodium Compounds**—The Reifsteins point out that in treating Addison's disease with sodium chloride it is recommended that the dosage of salt be large from 10 to 15 Gm daily. Divided doses seem to be most suitable, given in milk, capsules or tablets. They have had success with plain uncoated 1 Gm tablets. Enteric-coated tablets should be used with caution, as the coating may fail to dissolve. The extract of the anterior lobe of the pituitary should be tried in addition in refractory cases, as suggested by Wilder. Sodium administered to patients with Addison's disease will either render them symptomless or else minimize the amount of cortical extract required to maintain them in relatively good health. In some cases sodium alone will bring

about a complete remission of a severe relapse. Several patients treated with sodium salts alone still continue to remain well after more than a year, and the span of life of many other patients to date seems to have been prolonged indefinitely. The loss of cortical hormone in Addison's disease apparently removes the normal regulatory mechanism of the blood sodium level, which consequently falls, initiating the train of symptoms attributed to adrenal insufficiency. An associated secondary deficiency in the hormone from the anterior lobe of the pituitary body has recently been suggested. A confirmatory test for Addison's disease of considerable value is the salt-poor diet, which will provoke a typical crisis in a true case of adrenal insufficiency and thereby aid in establishing the diagnosis.

**Leukocyte Picture in Hodgkin's Disease.**—Roth and Watkins made sixty-five differential counts from blood smears in forty cases in which a diagnosis of Hodgkin's disease or lymphosarcoma was confirmed by pathologic study of an excised lymph node. None of the patients had had any previous treatment. The analysis revealed that leukocytosis of slight degree was present in cases in which the duration of the disease was between one and two years. Polymorphonuclear neutrophils were slightly increased in the differential count in cases in which the disease had existed six months or longer. A slight relative decrease in the number of lymphocytes occurred in the same cases. The monocytes showed a greater tendency toward a shift to the right than occurs in normal persons. Extensiveness of the disease apparently does not produce more marked changes in the blood. There is no specific change in the leukocyte picture which is diagnostic of Hodgkin's disease. In the nine cases of lymphosarcoma, the average percentage of polymorphonuclear neutrophils was slightly decreased and the average percentage of lymphocytes slightly increased as compared with the results in cases of Hodgkin's disease. The percentages of other leukocytes and the total leukocyte count were nearly the same as they were in cases of Hodgkin's disease.

#### Annals of Otol., Rhinol. and Laryngology, St. Louis

44: 913 1206 (Dec) 1935

- Architecture of Blood Vascular Networks in Erection and Secretory Lining of Nasal Passages. P. F. Swindle, Milwaukee.—p. 913  
Cancer of Epiglottis: Total Extirpation of Epiglottis by Laryngofissure Route. G. Tucker, Philadelphia.—p. 933  
Anatomic Anomalies of Importance to Otolaryngologist O. V. Batson, Philadelphia.—p. 939  
Association of Filtrable Virus and Bacteria in Production of Experimental Sinusitis C. S. Linton, St. Louis.—p. 948  
Acute Suppurative Otitis Media in Measles Report of Four Hundred and Twenty-Seven Patients. H. J. Williams, Philadelphia.—p. 956  
\*Streptococcus Haemolyticus Bacteremia, with Especial Reference to Otolaryngologic Conditions. J. L. Goldman and G. Schwartzman, New York.—p. 961  
Actinomycosis of Sphenoid with Actinomycotic Meningitis and Brain Abscess. R. Kramer and M. L. Som, New York.—p. 973  
Syphilitic Tonsillitis: Histopathology in Secondary Stage. E. R. Pund and Georgia H. Branner, Augusta, Ga.—p. 984  
The Sore Throat in Early Syphilis J. W. Brittingham, Augusta, Ga.—p. 990  
Congenital Fibro-Epithelial Cyst of Nasal Vestibule Review of Theories of Pathogenesis. J. A. Weiss, Chicago.—p. 993.

**Hemolytic Streptococcus Bacteremia.**—Goldman and Schwartzman classified their 168 cases of hemolytic streptococcus bacteremia according to the port of entry of the organism. Of the 168 patients, ninety-one died. A mortality rate ranging from 60 to 100 per cent was encountered in the following groups: gynecologic infections, articular and osseous infections, miscellaneous nonbacterial conditions associated with hemolytic streptococcus, surgical postoperative infections, pulmonary infections and acute otitis media with meningitis. In contrast to these, the mortality rate of the cases of secondary erysipelas was 20 per cent, of upper respiratory infections 34 per cent, of peripheral infections 36 per cent, of lateral sinus thrombosis 37 per cent, and of primary erysipelas 50 per cent. Of the cases in which the primary foci were located in the respiratory tract, 91 per cent occurred in the winter and spring months. The remaining conditions manifested no particular seasonal influence. Infections of the upper respiratory tract, lateral sinus thrombosis and osseous and articular infections showed a tendency to occur during the early years of life. The other conditions evidenced no predilection for a special age. In the group of peripheral infections the mortality during the

middle years of life was 75 per cent as compared to 25 per cent during the earlier years of life. The quantitative estimation of the number of hemolytic streptococci in the blood stream had both diagnostic and prognostic significance. The conspicuous groups illustrating the diagnostic value of these blood cultures were the cases of lateral sinus thrombosis, infections of the upper respiratory tract and peripheral infections. The prognostic import of these blood culture results is demonstrated by the fact that the groups with relatively low mortality presented a high percentage of positive blood cultures in fluid mediums only, while the groups with relatively high mortality had a high percentage of positive blood cultures in both solid and fluid mediums. Recovery occurred only in the gynecologic and associated nonbacterial cases showing growth in fluid mediums. The ten cases of infection of the upper respiratory tract in which long bone metastases developed manifested a predilection for young children, a tendency toward complete recovery (90 per cent), and a small number of organisms in the blood stream in a majority (fluid mediums only, 60 per cent).

#### Archives of Otolaryngology, Chicago

23: 391-508 (April) 1936

- Esophagitis I. Anatomy and Physiology and Review of Literature. H. R. Butt and P. P. Vinson, Rochester, Minn.—p. 391.  
\*Bronchoscopic Studies of Abscess of Lung. I. B. Goldman, New York.—p. 414.  
\*Acute Laryngotracheitis in Children: Study of Forty-Three Cases Occurring at the Children's Hospital, Los Angeles, in Epidemic Form, During the Fall and Winter of 1933-1934. W. J. Smith, Phoenix, Ariz.—p. 420.  
Scope of Physical Therapy in Otolaryngology. A. R. Hollender, Chicago.—p. 429.  
Brucellosis in Otolaryngology. C. C. Cody Jr., Houston, Texas.—p. 441.  
Rhinitis Caseosa: Analysis of Literature and Report of Case. H. Meyersburg, P. Bernstein and D. Mezz, Brooklyn.—p. 449.  
Surgical Repair of Facial Nerve R. C. Martin, San Francisco.—p. 458  
Variation of Pedicle Flap for Epithelization of Radical Mastoidectomy Cavity. M. S. Ersner and D. Myers, Philadelphia.—p. 469.

**Bronchoscopic Studies of Lung Abscess.**—According to Goldman, the value of the bronchoscopic examination may be best comprehended by realizing that an abscess of the lung is nearly always at one time or other openly connected with the bronchial tree and that the abscess which occupies a bronchopulmonary segment usually empties directly into a bronchus of the fifth or sixth order. Although the bronchoscope cannot enter the abscess cavity, the examination serves in a useful capacity in localization of the bronchopulmonary segment in which the abscess lodges. Identification of the orifice leads to recognition of the associated segment. Bronchoscopic examination, by visualizing the bronchial orifice, can reveal the position and extent of the pathologic process in the lung and define the area to be exposed by the surgeon. The most reliable single bronchoscopic sign of pulmonary abscess is the escape of foul pus from the mouth of the bronchus. The tracheobronchial tree is frequently congested and swollen. The mucous membrane of the bronchial orifice leading to the abscess is usually red and angry looking. Granulations may be present, or the mucous membrane itself may have a granular appearance. These changes in the mucous membrane are important in the differentiation of the origin of the pus in the bronchial tree, some of which may spill over to adjacent bronchi and make localization more difficult. If the spill-over is observed early, the mucous membrane of the bronchus may be so swollen as to occlude the opening of the bronchus. As the condition progresses into a chronic stage, secondary bronchiectasis develops. The pus from the bronchiectatic cavity is usually foul, but after a long interval the foul odor may disappear. This may indicate bronchiectasis around a shut-off abscess. Other bronchoscopic observations are those of distortion of the trachea, deformity of the carina, obstruction of bronchi, distortions of the bronchi, which are often associated with granulation tissue, and stenosis occurring in the fibrotic stage.

**Acute Laryngotracheitis in Children.**—Smith declares that a selective phase of an apparently mild infection of the upper respiratory tract was shown during the winter of 1933-1934 in and about Los Angeles. As a result, he has collected forty-three cases of nondiphtheritic laryngotracheitis, in

all of which the patient was so ill as to warrant hospitalization. The youngest patient was 6 months of age and the oldest 7 years. The predominating age was from 12 to 24 months. The condition was accompanied by some signs of an infection of the upper respiratory tract. Many of the patients had nothing more than mild pharyngitis or rhinitis for from twelve to forty-eight hours preceding definite symptoms that pointed to an infected and inflamed larynx. Hoarseness was the principal symptom, though it was not always present because the edema is more marked below the level of the true vocal cords. This dysphonia often progressed until a stage of complete aphonia was reached. There was associated a dry croupy irritative type of cough, nonproductive in character. As the edema progressed, the effects of mechanical obstruction became manifest. Retraction took place and was followed by restlessness. As the condition becomes progressively worse, cyanosis develops, which results not only from a limited supply of oxygen but from cardiac exhaustion. It is marked by a paleness rather than the usual blue type of cyanosis. When the latter stage is reached the child is usually moribund and beyond aid. Inspection by direct laryngoscopy usually showed the pharynx, epiglottis and larynx to be hyperemic. No actual membrane was present in any of these cases, although in a few there was a purulent sticky secretion, which adhered to the walls but could be easily removed without any resultant bleeding. In twenty-nine cases the chest was normal. Of the twelve cases in which tracheotomy was performed, there were only five in which positive signs were observed. The temperature, while not greatly elevated, showed evidence of an infection. The red blood cells and hemoglobin were not greatly altered from normal. The hemolytic streptococcus was the predominating organism, but the rapidity of the infection probably did not allow sufficient time for a great change to take place. The white cell count in most cases was in the normal range. Palliative treatment was considered only for the patients with mild involvement in whom retraction was not present or, if so, was very mild and was not increasing. Surgical intervention for the severe form is usually called for, which in twelve patients consisted of tracheotomy. Adequate posttracheotomy care is imperative. Of the twelve patients who required surgical intervention, four died.

### Archives of Pathology, Chicago

21: 419-564 (April) 1936

- \*Atherosclerosis: Special Consideration of Aortic Lesions. T. Leary, Boston.—p. 419.
- Id.: Etiology. T. Leary, Boston.—p. 459.
- Ultraviolet Spectrophotometric Studies of Human Blood Plasma. F. L. Dunn and A. T. Sudman, Omaha.—p. 463.
- Cardiovascular and Arthritic Lesions in Guinea-Pigs with Chronic Scurvy and Hemolytic Streptococcal Infections. M. P. Schultz, Washington, D. C.—p. 472.
- \*Factors Determining Necrosis or Survival of Liver Tissue After Ligation of Hepatic Artery. L. Loeffler, Brooklyn.—p. 496.
- Development of Sarcoma in Male Mice Receiving Estrogenic Hormones. W. U. Gardner, G. M. Smith, L. C. Strong and E. Allen, New Haven, Conn.—p. 504.
- Reactivity of Malignant Neoplasms to Bacterial Filtrates: II. Relation of Mortality to Hemorrhagic Necrosis and Regression Elicited by Certain Bacterial Filtrates. G. Schwartzman, New York.—p. 509.

**Atherosclerosis.**—Leary obtained diverse aortic lesions at necropsies from his service as medical examiner and supplemented this by aortas from the pathologic service of the Boston City Hospital and from the Children's Hospital. Most of the material was studied in frozen sections, after fixation in solution of formaldehyde, or in fresh sections. He found that all the lesions of aortic atherosclerosis, save the earliest mucoid change, are due to the presence of cholesterol. They are primarily intimal and depend for their nutrition on imbibition through the endothelium. In youth, cholesterol is introduced into the subendothelial tissue of the intima by globular lipophages or is engulfed by globular lipophages in this situation. Young fibroblastic tissue is produced in the subendothelial tissue, and the young fibroblasts engulf and metabolize the lipid, leading to its disappearance from the lesions. Repair with minimal scarring follows, since the young fibroblastic tissue does not form collagen. In middle age cholesterol metabolism within lipid cells is slowed, the connective tissue forms collagen and scar tissue is produced. There is interference with imbibition of nutriment through the scar tissue, and the deep layers

undergo necrosis, with the formation of secondary atheromatous "abscesses" (atherocheumas). Scars are the typical lesions in this period. In old age cholesterol metabolism ceases, globular lipophages accumulate in masses, with inadequate nutrition and support, and a primary atheromatous abscess is the typical lesion. The lesions of the ascending arch are exceptions to these rules, the metabolism of cholesterol being successfully carried on, as in youth, up to advanced ages. The connective tissue that is formed is reticular, as in youth, and minimal scarring is usual. Calcification arises in connection with necrobiosis or after necrosis has developed. It is a terminal monumental deposit marking the sites formerly occupied by living tissue.

**Liver Tissue After Ligation of Hepatic Artery.**—Loeffler did not produce necrosis of liver tissue in rats unless he ligated a branch of the hepatic artery and one of the portal vein at the same time. When partial necrosis occurred in any animal after ligation of the hepatic artery, both the hepatic artery and the portal vein were supposed to be occluded and the blood supply of the corresponding parts completely obstructed. This happened because of thrombosis of branches of the portal vein or of hepatic veins, either directly, through lack of blood supply to the walls of these vessels, or indirectly, owing to necrosis of the wall, caused by extravasation of bile from the necrotic gallbladder or bile ducts in some areas. Obstruction of both vessels in this way resulted in anemic or hemorrhagic infarcts of the liver.

### California and Western Medicine, San Francisco

44: 249-352 (April) 1936

- The Modern Therapy of Syphilis as Administered at the University of California Outpatient Department. H. Morrow, N. N. Epstein and L. K. Gay, San Francisco.—p. 257.
- Tolerance to Alcohol: Its Mechanism and Significance. E. Bogen, Olive View.—p. 262.
- Intracapsular Fractures: Neck of Femur: Statistical Survey of End Results. M. C. Mensor and E. T. Dewey, San Francisco.—p. 271.
- Cataracts Following Use of Dinitrophenol: Summary of Thirty-Two Cases. F. H. Rodin, San Francisco.—p. 276.
- Medicine and Surgery in the Fleet. L. W. Johnson, Mare Island.—p. 279.
- Urinary Extravasation Following Urethral Stricture. C. F. Rusche and S. K. Bacon, Hollywood.—p. 284.
- Studies in Rickets: Clinical Findings in One Thousand Private Patients. C. U. Moore and H. G. Dennis, Portland, Ore.—p. 288.

### Canadian Public Health Journal, Toronto

27: 157-208 (April) 1936

- \*Protamine Insulin. R. B. Kerr, C. H. Best, W. R. Campbell and A. A. Fletcher, Toronto.—p. 157.
- Twenty Years' Progress in Sanitary Conditions of Montreal. E. Gagnon, Montreal.—p. 160.
- Laboratory Identification of V Form of Bacillus Typhosus. J. Craigie and K. F. Brandon, Toronto.—p. 165.
- Criteria for Selection of Suitable Strains of Bacillus Typhosus for Use in Preparation of Typhoid Vaccine. M. H. Brown, Toronto.—p. 171.
- Summary of Results of Treatment in Early Syphilis. S. C. Peterson and C. R. Donovan, Winnipeg, Man.—p. 176.
- Construction and Equipment in Relation to Operation of Swimming Pools. R. F. Heath, Toronto.—p. 180.
- Arsenical Poisoning in Construction Camp. F. W. Jackson, Winnipeg, Man.—p. 185.

**Protamine Insulin.**—Kerr and his associates used protamine insulin in twenty-five cases of diabetes. They agree with Root, White, Marble and Stotz that, following the administration of protamine insulin, the blood sugar curve is not lowered so precipitately as with regular insulin but slopes off more gradually, is less likely to pass below normal levels and rises slowly to previous levels. The duration of the curve is from two to three times as long as when a similar dose of regular insulin is used. When patients receiving regular insulin are allowed to have a moderate glycosuria, the substitution of an equal dose of protamine insulin causes diminution in the glycosuria, ketosis improves and the patient's feeling of well being is definitely more marked. In the severe cases and in juvenile and the so-called unstable diabetic patients, reactions due to hypoglycemia have been found to be much less frequent with protamine insulin. The authors regard this as one of the main advantages of the new product. In conditions in which more rapid action is desirable, such as coma, regular insulin is to be preferred. Protamine insulin has presented new problems in the administration of insulin; so far the administration of a



dose of regular insulin in the morning and an evening dose of protamine insulin seems to be favored by others. While the authors have found this mode of administration to be satisfactory in many instances, in others different adjustments of dosage and combinations of regular and protamine insulin appear to be more effective in the control of some cases of diabetes. Therefore, further experience with protamine insulin is required before general rules for its use can be formulated. Protamine insulin gives promise of being an important contribution to the restoration of a more physiologic state in the diabetic patient.

### Indiana State Medical Assn. Journal, Indianapolis

29: 163-214 (April 1) 1936

- Indiana's Program in Maternal and Child Health Under the Social Security Act. A. McCown, Washington, D. C.—p. 163.  
Professional Anesthesia: Hospital Plan in Operation Eighteen Years. A. L. Schwartz, Cincinnati.—p. 165.  
Late Toxemias of Pregnancy. G. W. Gustafson, Indianapolis.—p. 168.  
Toxic Diffuse Goiter (Exophthalmic): Its Diagnosis and Treatment. J. R. Yung, Terre Haute.—p. 172.  
Avertin Anesthesia: Report of Three Thousand Cases. Lillian B. Mueller, Indianapolis.—p. 175.  
Irritable Female Bladder and Urethra. J. M. Townsend, Louisville, Ky.—p. 181.  
Conservative versus Radical Pelvic Surgery. P. Beard, Indianapolis.—p. 184.

29: 215-264 (May) 1936

- Infections in Urinary Tract. W. F. Braasch and E. N. Cook, Rochester, Minn.—p. 215.  
\*Benign Tumors of the Stomach: Gastric Polyposis. E. M. Van Buskirk, Fort Wayne.—p. 218.  
Ovarian and Anterior Pituitary Sex Hormones and Their Clinical Application. J. T. Witherspoon, Indianapolis.—p. 223.  
Rubella (German Measles) and Its Complications. H. W. Shaw, Henryville.—p. 227.  
Nonpenetrating Injuries to Abdominal Viscera. J. Thomson, Garrett.—p. 229.  
Treatment of Some of the More Common Skin Diseases. L. A. Sandoz, South Bend.—p. 233.

**Benign Tumors of the Stomach.**—Van Buskirk states that the occurrence of gastric polyposis is relatively infrequent. The etiology is not definitely known. The condition is often found in association with hypertensive cardiovascular disease, syphilis, tuberculosis, chronic pleurisy and atheroma of the vessels. The microscopic picture consists of hypertrophied gastric glands and varying stages of vascular congestion involving only the mucosa in general, the musculature and the connective tissue being free. Grossly, the tumors are more or less uniform, being soft in consistency and gray, grayish brown or red, depending on the vascularity. They may vary in size from millet seeds to covering the major portion of the stomach. The surface of the tumors may be covered with a thick egg white mucus or hemorrhagic areas of ulceration. At times inspection of the stomach will not be very enlightening, but palpation may give the sensation of the presence of food. That the symptoms of gastric polyposis are not characteristic is revealed by the fact that they are unexpectedly found at necropsy or at operation. At times the duration of symptoms covers a period of years and then occasionally may be very brief, with anemia, loss of weight and strength being the apparent sole manifestations. In some cases a sense of pressure or weight in the epigastrium, progressing to discomfort and abdominal distress, and in other cases abdominal pain are usually the most common complaints. The physical observations are practically negative. The most important procedures revealing conclusive evidence consist of fluoroscopy, x-ray and gastroscopy. In making a diagnosis of gastric polyposis, all factors must be considered and all possibilities must be utilized. In the differential diagnosis of gastric polyposis, carcinoma, extragastric tumors, foreign bodies, hairballs, ulcer, pernicious anemia, functional dyspepsia, sarcoma and syphilis should be considered; but any of these conditions may be present coincidentally with gastric polyposis. In all cases careful roentgenologic examination with accurate interpretation offers the greatest aid in diagnosis. Carcinoma is sometimes found in conjunction with gastric polyposis, one portion of the tumor being benign and the other part undergoing malignant degeneration. Cases with stenosis of the pylorus or obstruction of the pylorus due to a polyp of the stomach, intermittent stenosis of the pylorus due to a gastric polyp, intussusception into the stomach and duodenum due to

a gastric polyp and hemorrhage have been reported as complications. Surgical and adequate reconstructive procedures are indicated in the individual cases and often have changed a diagnosis of malignant tumor to one of benign tumor and given the patient years of good health. When surgical removal is possible, roentgen therapy and radium may prove beneficial.

### Journal of Bone and Joint Surgery, Boston

18: 263-558 (April) 1936. Partial Index

- Prognosis and Treatment of Tuberculosis of Bones of Foot. L. J. Miltner and H. C. Fang, Peiping, China.—p. 287.  
Roentgenographic Features of Rheumatoid Arthritis. A. B. Ferguson, New York.—p. 297.  
Fracture of Lateral Condyle of Humerus in Childhood. P. D. Wilson, New York.—p. 301.  
\*Hematogenous Acute Osteomyelitis in Children. J. C. Wilson and F. M. McKeever, Los Angeles.—p. 328.  
Healing of Semilunar Cartilages. D. King, San Francisco.—p. 333.  
Pyogenic Osteomyelitis of Spine: Analysis and Discussion of One Hundred and Two Cases. J. Kulowski, St. Joseph, Mo.—p. 343.  
Sacralthrogenetic Tetralgia: II. Study of Sacral Mobility. H. C. Pitkin and H. C. Pheasant, San Francisco.—p. 365.  
Lumbosacral Fusion for Relief of Low-Back Pain: Report of Thirty-Five Cases. H. G. Lee, Boston.—p. 375.  
\*Method of Dealing with Chronic Osteomyelitis by Saucerization Followed by Skin Grafting. B. Armstrong, Margate, Kent, England, and T. F. Jarman, Bridgend, Wales.—p. 387.  
Fractures of Forearm Reduced by Direct Leverage. J. E. M. Thomson, Lincoln, Neb.—p. 397.  
End Results in One Hundred Fractures Treated by Internal Removable Fixation. W. B. Carrell, Dallas, Texas.—p. 408.  
Pelvic Abscesses Associated with Acute Purulent Infection of Hip Joint. J. A. Freiberg, Cincinnati, and R. Perlman, Brooklyn.—p. 417.  
Apophyseal Subluxation: Disturbances In and About Intervertebral Foramen Causing Back Pain. L. A. Hadley, Syracuse, N. Y.—p. 428.  
Hemihypertrophy and Hemiatrophy: Congenital Total Unilateral Somatic Asymmetry. C. W. Peabody, Detroit.—p. 466.  
Epidermoid Cyst in Bone of Skull. J. H. Couch, Toronto.—p. 475.  
Congenital Astragalocalcaneal Fusion. S. S. Gaynor, New York.—p. 479.  
Fracture of Acetabulum with Central Dislocation of Head of Femur: Method of Treatment. F. A. Jostes, St. Louis.—p. 483.  
Localized Osteitis Fibrosa in the New-Born and Congenital Pseudarthrosis. E. L. Compere, Chicago.—p. 513.  
\*Pathologic Dislocation of Sacro-Iliac Joint. J. B. L'Episcopo, Brooklyn.—p. 524.

**Hematogenous Acute Osteomyelitis in Children.**—Wilson and McKeever discuss the effect of early and late operations, with regard to the mortality and development of secondary foci, on 110 patients suffering from hematogenous acute osteomyelitis, exclusive of the bones of the head and the face. The data suggest that perhaps the answer to the problem is not the earliest possible surgical invasion of the bone, but a well timed adequate drainage of the medullary canal when the patient's resistance is at the highest possible point. It has been their repeated experience that an acutely suffering child who enters the wards in a badly dehydrated condition with a very high temperature and pulse rate will become a vastly better operative risk in twenty-four, forty-eight or even seventy-two hours, during which time the suffering has been relieved and the dehydration overcome. The improvement in the general condition will be obvious. The lesion will probably be quite evident when the child enters the hospital, as will the eventual necessity for an operative procedure; but timing is the important factor in treating acutely sick children. A blood-borne infection of bone may be more successfully handled by adhering to the principle of allowing the infection to localize. A catastrophe may result from a too early osteotomy of an infected bone, for the same reason that incision of a brawny cellulitis is often fatal. On the other hand, it seems unwise to permit a patient to harbor a well formed abscess for days or to drain such an abscess only partially and imperfectly. Such procedures favor the formation of multiple metastatic lesions, as is evidenced by the preponderance of these lesions in cases in which only incision of the soft tissues was carried out, or those in which spontaneous rupture of the abscesses was permitted.

**Treatment of Chronic Osteomyelitis.**—Armstrong and Jarman conceived the idea that skin grafting might be applied in promoting the rapid epithelization and healing of bone cavities left after radical operative treatment of chronic osteomyelitis. Prior to the adoption of this method some eight years ago, these cavities had been treated by packing with sterile gauze in the

ordinary way, and it was noted that the granulations grew much faster from the peripheral parts of the cavities than from their depths, which often resulted in the formation of small deep-lying sacculi connected by a narrow track with the superficial surface of the granulation tissue. These sacculi were responsible for the persistence of multiple points of discharge on the surface of the granulation tissue and therefore failure of epithelization. The method described obviates this disadvantage and promotes really rapid epithelization. The first stage consists of saucerization of the diseased area and the second stage of skin grafting of the cavity, Esser's plan being used of applying the grafts on a mold of Stent's dental composition. The authors do not claim that the end results are superior to those obtained by the Orr method but that their method has the advantage of promoting faster epithelization and healing and that there is no unpleasant odor associated with it. It has occurred to them that this method might, with advantage, be applied during Baer's maggot treatment at that stage when the wounds are filled with healthy, red granulations, when the reaction of the wound discharges is alkaline and when pathogenic bacteria are few. The deep but completely epithelized cavities which result from this method of treatment tend to diminish with the passage of years.

**Pathologic Dislocation of Sacro-Iliac Joint.**—L'Episcopo reports a case of true pathologic dislocation of the sacro-iliac joint. He doubts whether the suppurative condition alone was responsible for the dislocation, because the os innominatum cannot slide upward on the sacrum unless there is also a separation at the symphysis pubis, so that there must be a loosening of both these joints for the condition to occur. The patient gave a history of having a spontaneous abortion a few weeks before the onset of the acute infection of the sacro-iliac joint. She was about two months pregnant at the time. Probably because of the action of some hormone there is a relaxation of all the pelvic joints during pregnancy. However, relaxation of these joints takes place in a lateral direction. Because of the preexisting physiologic relaxation at the symphysis pubis, it is the author's belief that the coincident infection of the sacro-iliac joint, with resulting destruction in that joint, was responsible for the upward displacement of the os innominatum on the sacrum.

## Journal of Nutrition, Philadelphia

11: 293-390 (April 10) 1936

- Healing of Rickets in Rats on Diet Containing Negligible Amounts of Calcium and Vitamin D. J. H. Jones and B. N. E. Cohn, Philadelphia.—p. 293.
- Effect of Quantitative Underfeeding and of Vitamin A Deficiency on Tissue Lipids of Rats Fed Diets Low in Cholesterol. Helen L. Gillum and Ruth Okey, Berkeley, Calif.—p. 303.
- Effect of Quantitative Underfeeding and of Vitamin A Deficiency on Liver Lipids of Rats Fed Diets with Added Cholesterol. Helen L. Gillum and Ruth Okey, Berkeley, Calif.—p. 309.
- Basal Metabolism of Wyoming University Women. Elizabeth J. McKittrick, Laramie, Wyo.—p. 319.
- \*Study of Magnesium Needs of Preschool Children. Amy L. Daniels and Gladys J. Everson, with cooperation of Mary F. Deardorff, Elizabeth M. Knott, Florence I. Scoular and Olive E. Wright, Iowa City.—p. 327.
- Studies on Relation of Diet to Goiter: III. Further Observations on Goitrogenic Diet. R. E. Remington and H. Levine, Charleston, S. C.—p. 343.
- Antiscorbutic Potency of Reversibly Oxidized Ascorbic Acid and Observation of Enzyme in Blood Which Reduces Reversibly Oxidized Vitamin. J. H. Roe and G. L. Barnum, Washington, D. C.—p. 359.
- Results of Feeding Various Levels of Soil Containing Beryllium to Chickens, Dogs and Rats. C. W. Duncan and E. J. Miller, East Lansing, Mich.—p. 371.
- \*Vitamin Content of Canned Pineapple Juice. N. B. Guerrant, R. A. Dutcher, Florence S. Tabor and R. Rasmussen, State College, Pa.—p. 383.

**Magnesium Needs of Preschool Children.**—Daniels and Everson made thirty-three magnesium, calcium and phosphorus balance studies in thirteen children between 4 and 7 years of age, who received varying amounts of magnesium as well as calcium and phosphorus. Each balance study, with one exception, has consisted of a preliminary period of six or seven days to allow for adjustment to a given ingestion level, and a double metabolism period of five days each, thus minimizing unavoidable errors from inaccurate stool marking. Each day's food

consisted of milk, meat, eggs, potatoes, prunes, apple sauce, banana, carrots, breakfast cereal, bread, butter and 1.5 Gm. of iodized table salt, distributed among the three meals. Distilled water was used for drinking and cooking purposes. The question of vitamin D or C deficiency was ruled out by 3.6 Gm. of cod liver oil and 4 drops of viosterol twice daily, with a given amount of orange juice and 120 Gm. of canned tomato. Variations in the level of magnesium were obtained by altering the amount of milk and cereals in the diets. The methods for the calcium and phosphorus determinations were the same as those of a former study. Magnesium determinations were made with filtrates from the calcium precipitates by the method described by Epperson. The magnesium ingestions of the children studied were between 11.3 and 19 mg. per kilogram, whereas the magnesium retentions ranged between 0.4 and 3.1 mg. per kilogram. High retentions were not consistently associated with high ingestions, nor were low ingestions always followed by low retentions. Calcium:magnesium ingestion ratios ranged between 2.8 and 6.7, whereas calcium:magnesium retention ratios were between 3.8 and 30.3. The magnesium of the urine, which tended to parallel the magnesium ingestion, suggested that this might be used as a means of determining the sufficiency of the diet in this respect. Low urinary magnesiums, when coexistent with low retentions, were indicative of too low ingestions. High urinary magnesiums with low retentions were interpreted as indicating that enough had been fed and that previously the individual had been receiving a diet containing a sufficient amount, whereas high urinary magnesiums with high retentions following high ingestions indicated that the individual had been receiving previously less than the optimal amount. Seventy-five per cent of the children studied were in this group. It was concluded tentatively that diets of children of the ages studied should contain not less than 13 mg. of magnesium per kilogram of body weight.

**Vitamin Content of Canned Pineapple Juice.**—Guerrant and his associates made a biologic assay of canned pineapple juice for its vitamin content, using standard biologic methods, which showed this juice to be a good source of vitamins A and B and a fair source of vitamin C, and to contain a measurable quantity of vitamin G. When expressed in terms of vitamin units, 1 ounce of the juice contained approximately 30 Sherman units of vitamin A, 20 Sherman units of vitamin B, 2.5 Sherman units of vitamin G, and four minimal protective doses or 40 international units of vitamin C.

## Journal of Pharmacology & Exper. Therap., Baltimore

56: 389-492 (April) 1936

- \*Effect of Ephedrine on Erythrocytes, Leukocytes and Platelets in Normal and Splenectomized Guinea-Pig. S. L. Simpson and B. H. E. Cadness, London, England.—p. 389.
- Depressor Substances in Posterior Lobe of Pituitary. E. Larson, Philadelphia.—p. 396.
- \*Antagonism Between Posterior Lobe Pituitary Hormones and Insulin. H. C. Ellsworth, Montreal.—p. 417.
- Studies of Morphine, Codeine and Their Derivatives: XII. Isomers of Morphine and Dihydromorphine. N. B. Eddy, Ann Arbor, Mich.—p. 421.
- Comparison of Effects of Sodium Iso-Amylethylbarbiturate (Sodium Amytal) and of Sodium N-Hexylethyl Barbiturate (Ortal Sodium) on Intact Intestine in Unanesthetized Dog. C. M. Gruber, Philadelphia.—p. 432.
- Further Observations with New Method of Demonstrating Changes in Blood Supply of Ear. P. J. Hanzlik, F. De Eds and B. Terada, San Francisco.—p. 440.
- Central Action of Acetylcholine. G. A. Silver and H. G. Morton, Durham, N. C.—p. 446.
- Increased Cardiac Output of Dinitrophenol. J. V. Galgiani and M. L. Tainter, San Francisco.—p. 451.
- Alleged Occurrence of Acetylcholine and Adrenalin in Cat's Saliva. J. Secker, Newcastle upon Tyne, England.—p. 464.
- Study of Twenty-Three Quaternary Ammonium Iodides. H. M. Lee, A. M. Van Arendonk and K. K. Chen, Indianapolis.—p. 466.
- Choline as Factor in Elaboration of Adrenalin. R. L. Stehle, K. I. Melville and Frances K. Oldham, Montreal.—p. 473.

**Effect of Ephedrine on Erythrocytes, Leukocytes and Platelets.**—Simpson and Cadness gave female guinea-pigs weighing from 300 to 400 Gm. subcutaneous injections of ephedrine hydrochloride in a 2 per cent aqueous solution. The dose used was 2 mg. per hundred grams of body weight. Specimens of blood were obtained by pricking the small vessels of the ear before injection and subsequently at intervals of two

hours for a period of from twelve to twenty-four hours. The duration of the effect of the ephedrine was indicated by the persistence of exophthalmos and erection of hair. The usual methods of enumerating the different cell elements were employed. For the experiments on splenectomized pigs the spleen was removed under pentobarbital sodium and ether anesthesia, and the postoperative effect of ephedrine on the blood was ascertained after a period of ten days, in which time the guinea-pigs appeared to have made a complete recovery. In normal guinea-pigs the erythrocytes were increased by more than a million, the leukocytes by some 10,000 and the platelets by almost a million. The hemoglobin, although raised 17 per cent, did not increase to quite the same extent as the erythrocytes (22 per cent). The initial leukocytosis was associated with a preponderance of lymphocytes, but subsequently there was a progressive increase in the proportion of polymorphonuclear neutrophils. The maximal numerical increase was attained first by the erythrocytes, then by the leukocytes and finally by the platelets. The increases in the total number of erythrocytes, leukocytes and platelets in splenectomized guinea-pigs were of the same order as those obtained in the normal guinea-pigs. With increasing skill in the performance of splenectomy, the operation did not appreciably affect the blood count when taken after a period of ten days. The conclusion is that the spleen is not essential for these changes in the guinea-pig. In addition to other evidence the disproportionate increase in the different cell elements indicated that "blood concentration" is not an adequate explanation of the changes. Ephedrine probably causes extrusion into the circulation of erythrocytes, leukocytes and platelets from storage and hematopoietic centers, including the bone marrow.

**Posterior Lobe Pituitary Principles and Insulin.**—Ellsworth offers evidence that mild insulin hypoglycemia in dogs can be abolished completely by small doses of the oxytocic principle of the posterior lobe of the pituitary; corresponding doses of the pressor fraction have little or no effect. Larger doses of the oxytocic principle not only abolish the effect of insulin but cause a rise in the blood sugar level above normal.

### Military Surgeon, Washington, D. C.

78: 241-328 (April) 1936

- Centennial of World's Largest Medical Library: the Army Medical Library of Washington, Founded 1836. E. E. Hume.—p. 241.
- The First Reserve Officers Camp. H. C. Coe.—p. 267.
- \*Diagnosing the Undiagnosed Lues. W. S. Bainbridge.—p. 273.
- The Seventh American Scientific Congress, with Especial Reference to Section on Hygiene. B. J. Lloyd.—p. 281.
- Organization and Function of Medical Regiment. N. J. Kirk.—p. 282.
- Acute Nondiphtheritic Inflammatory Edema of Larynx: Report of Seven Cases with Sudden Death from Asphyxia. R. O. Dart.—p. 287.
- The Ship's Surgeon of Three Centuries Ago. W. H. Michael.—p. 295.
- Report on Malarial Control, Fourth Corps Area. W. N. Bispham.—p. 299.
- The Art of Growing Old. F. J. Yokoun.—p. 304.
- Records in the Nursing Division of the Surgeon General's Office. Julia C. Stimson.—p. 307.

**Undiagnosed Syphilis.**—As an aid in the diagnosis of syphilitic infection, Bainbridge used definite changes of the hands observed roentgenographically, though there may not be any symptoms in this region or any general evidence of the disease. He quotes Riley and Smith: "An important finding both in acquired and congenital syphilis, which so far as we know has not been recognized and which is oftentimes of very great value in deciding the diagnosis, is the occurrence on the phalanges of the subperiosteal budding and resorption areas without necessary relation to any other syphilitic pathology. These may be so slight as to be either overlooked or disregarded till their diagnostic importance is realized. Even with a negative Wassermann reaction, so frequent with bone syphilis, their occurrence is a definite indication of syphilitic infection." This pathologic change is noted along the shafts of the phalanges and does not occur at the joints to be confused with arthritis. A combination of the areas of budding and resorption, and arthritic changes may be present in the same case and make the diagnosis doubly difficult. In addition, in these cases of possible syphilitic infection, at times, there is an

irregularity of the cancellous tissue and in the alinement of the compact tissue surrounding it. Often the changes are so slight that a high powered magnifying glass must be employed to detect them. The roentgenologist, looking for gross lesions, frequently does not observe these changes, or discounts their presence as of no significance and submits a negative diagnosis. The author has found this diagnostic adjunct to be of assistance in deciding doubtful cases, or as a lead to the diagnosis in some heretofore unsuspected ones. In cases in which the serologic tests have been weakly positive but definite areas of budding and resorption existed, he has been led to give a provocative Wassermann test, with the observation that in most of them a positive reaction occurred. Whether or not the blood or spinal fluid confirmed the roentgen observations, in many cases in which the latter have given apparent evidence by the areas of budding and resorption—really scars—of a specific infection, antisyphilitic treatment has been instituted, and the beneficial results proved the accuracy of the diagnosis.

### New York State Journal of Medicine, New York

36: 591-680 (April 15) 1936

- Modern Renal Surgery, with Particular Reference to Heminephrectomy. O. S. Lowsley, New York.—p. 591.
- Psychic Factors in Gastro-Intestinal Disease. G. E. Daniels, New York.—p. 602.
- Prognosis of Moderate Deafness in Youth: Variations with Disease, Management and Treatment. E. P. Fowler, New York.—p. 607.
- A Hospital Epidemic of Diphtheria. J. E. Perkins, Amsterdam.—p. 614.
- Lipoidosis Cutis et Mucosae. R. N. Tripp, New York.—p. 619.
- Concentrated Antipneumococcus Serum in Type I Pneumonia: Control of Dosage by Skin Tests with Type Specific Polysaccharide. T. J. Abernethy, New York.—p. 627.
- Tumors at the Base of the Skull. S. B. Wortis and S. Brock, New York.—p. 635.
- Erythroblastic Anemia: Clinical Observations in an Adult. E. G. Allen and D. S. Childs, Syracuse.—p. 641.
- Chronic Lymphoid Leukemia with Leukemic Phlebitis. H. H. Haft, W. A. Groat and T. C. Wyatt, Syracuse.—p. 646.
- Subcutaneous Empyema Complicating Labor: Case Report. H. F. Hulbert, Dansville.—p. 648.
- Between Mental Health and Mental Disease. B. Liber, New York.—p. 650.
- Medical History of Schenectady County. E. Kellert, Schenectady.—p. 651.

### Philippine Islands Med. Association Journal, Manila

16: 133-202 (March) 1936

- Situs Inversus Totalis and of Dextrocardia Discovered by X-Ray Among Filipinos: Cases. S. A. Francisco and C. Ongpin, Manila.—p. 133.
- \*Air-Tight Drainage of Nontuberculous Empyema. J. Santillan and B. B. Perez, Manila.—p. 141.
- Food Intake of Filipino College Students. I. Concepcion, Manila.—p. 155.
- The New Deal in Medicine. R. L. Blanco, Cebu.—p. 165.
- Postoperative Leakage in Ureterolithotomies. J. Eduque and A. T. Zavalla, Manila.—p. 171.
- Role of Gelatin Formula in Reducing Postnatal Birth Weight of the New-Born. H. Acosta-Sison and J. S. Galang, Manila.—p. 177.

**Air-Tight Drainage of Nontuberculous Empyema.**—Santillan and Perez treated six cases of acute empyema by air-tight drainage. One happened to be of tuberculous and pneumococcal origin and another developed pyarthrosis of the left shoulder, which proved fatal. The treatment is started a few days after the onset of the empyema. The method used by Bettman is adhered to. The site selected is the eighth or ninth interspace at the posterior axillary line. The space selected need not necessarily be the most dependent portion of the cavity. In fact, this may be a handicap; for, when the diaphragm rises as the cavity of the empyema diminishes in size, the tube which is at the bottom will necessarily be pressed by the rising diaphragm. The site is anesthetized locally with procaine hydrochloride, an aspirating needle is inserted, a small amount of pus is aspirated to insure success, a small slit is made in the skin, and a trocar admitting a No. 14 French catheter is inserted. The trocar is gradually introduced perpendicularly to the thorax. When the cavity is reached the obturator is pulled out and the lubricated catheter is inserted immediately. The flaring edge of the catheter is cut and rethreaded on the same catheter in order to keep it in place. Dressings are applied. The pus is aspirated every three hours and from one third to one half of its volume is replaced by

dilute solution of sodium hypochlorite. After one week if airtightness is lost another catheter, one size larger, is inserted. By introducing catheters of increasing sizes, the cavity is kept almost continuously air tight. When the fever drops, which usually takes place in from one to three weeks, the patient is permitted to walk, to take bending exercises and to blow rubber balloons. Before doing so, the free end of the tube is connected with a two-holed, wide-mouthed bottle half filled with dilute solution of sodium hypochlorite. A pocket is made on one side of the patient's binder and the bottle is put in it. By this method the patient can walk around with ease and comfort. When this stage of the treatment is reached the aspiration is done only once or twice daily. The siphonage into the bottle replaces the aspiration, and the patient may be discharged from the hospital and be treated at home or at the clinic.

### Radiology, Syracuse, N. Y.

26: 391-520 (April) 1936

- Roentgenographic Image of Neoplasms of Bone. C. G. Sutherland, Rochester, Minn.—p. 391.
- \*Roentgenologic Changes in Malacic Diseases of Bone. J. D. Camp, Rochester, Minn.—p. 399.
- Radiotherapy for Bone Tumors. A. U. Desjardins and W. C. Popp, Rochester, Minn.—p. 409.
- Clinical and Surgical Aspects of Bone Tumors. H. W. Meyerding, Rochester, Minn.—p. 417.
- Roentgenographic Features of Skeletal and Extraskelatal Lesions in Some Diseases of Children. R. L. J. Kennedy, Rochester, Minn.—p. 424.
- \*Pathogenesis and Radiotherapy in Carcinoma of Thyroid. I. Levin, New York.—p. 436.
- Shape of Female Pelvis and Its Clinical Significance: Roentgen and Clinical Study. L. H. Garland, A. V. Pettit, R. D. Dunn and P. Shumaker, San Francisco.—p. 443.
- Vertebral Involvement in Hodgkin's Disease: Report of Three Cases. Rieva Rosh, New York.—p. 454.
- Diagnosis and Roentgen Treatment of Carcinoma of Head of Pancreas. E. A. Merritt and R. R. Rathbone, Washington, D. C.—p. 459.
- Treatment of Some Infections by Means of Roentgen Ray. R. H. Stevens, Detroit.—p. 465.
- Pulmonary Changes in Polycythemia Vera. I. S. Hirsch, New York.—p. 469.
- March Foot or Pied Forcé. W. W. Furey, Chicago.—p. 474.
- Zinc Filters: Note. R. S. Landauer, Highland Park, Ill.—p. 478.
- Routine Roentgen Examinations of Chest of Patients Admitted to the State of Wisconsin General Hospital During a Three Months' Period. E. A. Pohle, L. W. Paul and W. H. Oatway Jr., Madison, Wis.—p. 480.
- Some Lawsuits I Have Met and Some of the Lessons to Be Learned from Them (Eighth Instalment). I. S. Trostler, Chicago.—p. 485.

**Roentgenologic Changes in Malacic Diseases of Bone.**—Camp classifies the causes of malacic diseases of bone ("hyperparathyroidism") into atrophy, congenital defects, dietary insufficiency and avitaminosis, renal insufficiency, endocrine malfunction and miscellaneous conditions of unknown etiology. 1. Atrophy of bone, which results from disuse incident to trauma, fracture, arthritis, neurotrophic disorders or circulatory disease, is characterized by its limitation to the affected part. 2. In congenital defects are placed cases in which the bones are fragile because of a failure on the part of certain primitive cells to differentiate into their normal tissues. The basic defect appears to be an inability to form osteoblasts. The entire skeleton is affected. The bones have a bowed, misshapen, shortened and thickened appearance. Callus is easily detected in the shafts at the sites of fracture. Compression of the thorax and fracture of the ribs are common. Ossification in the skull is deficient and irregular. A bitemporal and occipital protuberance of the skull is common. 3. Rickets and osteomalacia constitute the lesions in dietary insufficiency and avitaminosis, which result from a deficient supply of calcium or phosphorus in the food or a deficient intake of vitamin D. There is little doubt that they are one and the same disease, except that rickets affects the growing child and osteomalacia the adult. In osteomalacia the significant roentgenologic changes consist of generalized osteoporosis, marked thinning of the cortical bone, with softening, bowing, fractures, kyphosis and generalized deformities. Of particular interest are the transverse osteoid zones, described by Looser, which simulate pathologic fractures. They usually occur in cases in which the disease is well advanced, and they have a tendency to be symmetrically distributed. Osteomalacia, especially the senile variety, is frequently confused roentgenologically with

the skeletal changes of hyperparathyroidism. Cysts, however, do not occur in osteomalacia, and the transverse osteoid zones, which are so common in osteomalacia, are not observed in hyperparathyroidism. In doubtful cases blood chemistry and even biopsy of a bone may be necessary to distinguish osteomalacia from hyperparathyroidism. 4. Renal dwarfism occurs in children, in association with chronic renal insufficiency and apparently as a result of it. The stunting of growth and delayed union of epiphyses may be complicated by a rachitic process, which has all the clinical, roentgenologic and histologic characteristics of true rickets. Skeletal development is always retarded. There usually is something atypical: the lesions may be asymmetrical or different bones may be involved unequally. In cases of long duration there is a deep mottled zone at the ends of the long bones, which consists of osteoid tissue, cartilage, fibrous tissue and calcified matrix. Distortion, inflections and various deformities may result. In advanced cases the granular appearance more closely simulates the granular osteoporosis of hyperparathyroidism than does any other malacic disease of bone. In renal rickets the nephritis antedates the skeletal changes, whereas in hyperparathyroidism the skeletal changes usually antedate the nephritis. 5. Under endocrine dysfunction are hyperparathyroidism, hyperthyroidism, Cushing's syndrome, suprarenal disease, pancreatic disease and carcinoma of the pancreas and pancreatitis. 6. The miscellaneous conditions of unknown etiology include focal osteitis fibrosa cystica, osteitis deformans (Paget's disease), disease of the reticulo-endothelial system, Gaucher's disease and blood dyscrasias. Because of the multiplicity of conditions that may affect the mineral content and structure of the skeleton, the early recognition of any particular disease by roentgenograms alone may be exceedingly difficult.

**Pathogenesis and Radiotherapy in Carcinoma of Thyroid.**—According to Levin, in view of the pathogenesis and mode of formation of carcinoma of the thyroid, the therapy in the early stage of the disease is, in reality, the therapy of benign goiter. If evidence is found of proliferative activity, surgical removal should be followed by a course of radiotherapy over the operative field and also over the regions of the skeleton in which the skeletal metastases usually develop. In postoperative radiotherapy of carcinoma of the thyroid, the author employs radium in the operative field and high voltage roentgen therapy over the chest and skeleton. When the condition is in an advanced stage and a hard nodular tumor is present, invading diffusely the thyroid and firmly adherent to the underlying tissues of the neck, the treatment of choice is radiotherapy. The method consists in an incision over the tumor, a biopsy, and, depending on the size of the tumor, either buried gold seeds or the insertion of removable platinum needles. The objective is to destroy all the carcinomatous tissue, which must be accompanied by the destruction of the remnants of the normal thyroid tissue. As a result, there always develops a certain degree of myxedema. This complication proves that a good therapeutic result was obtained. Carcinoma of the thyroid functions in the same manner as a normal gland. Whenever such a myxedema disappears without treatment, it is an indication of either local recurrence or metastasis.

### South Carolina Medical Assn. Journal, Greenville

32: 83-116 (April) 1936

- Extradibetic Uses of Insulin. R. Wilson Jr., Charleston.—p. 83.
- Acute Laryngeal Stenosis in Children. E. W. Carpenter, Greenville.—p. 87.
- Early Diagnosis of Chronic Arthritis. O. B. Chamberlain, Charleston.—p. 90.
- Tumors of the Brain: Brief Review of Their Pathology. W. L. A. Wellbrock, Rochester, Minn.—p. 94.

### Southern Surgeon, Atlanta, Ga.

5: 1-90 (Feb.) 1936

- Empyema in Children. J. W. Bodley, Memphis, Tenn.—p. 1.
- Conception and the Safe Period. G. F. Douglas, Birmingham, Ala.—p. 8.
- Diagnosis and Treatment of Surgical Lesions of Pancreas. I. Abell, Louisville, Ky.—p. 22.
- Uretero-Intestinal Anastomosis. L. G. Baggett, Atlanta.—p. 31.
- Ephraim McDowell. E. Podolsky, Brooklyn.—p. 42.
- Jaundice: Diagnosis, Treatment and Prognosis. R. L. Sanders, Memphis, Tenn.—p. 50.
- Enterostomy. G. A. Hendon, Louisville, Ky.—p. 60.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## Brain, London

59: 1-134 (March) 1936

The Newer Knowledge of Virus Diseases of Nervous System: Review and Interpretation. E. W. Hurst.—p. 1.

\*Effects of Occipital Lobectomy on Vision in Chimpanzee. K. W. Spence and J. F. Fulton.—p. 35.

Cerebral Representation of Retina in the Chimpanzee. S. Poljak and R. Hayashi.—p. 51.

Pituitary-Hypothalamic Mechanism: Experimental Occlusion of Pituitary Stalk. W. Mahoney and D. Sheehan.—p. 61.

Effects of Lesions of Dorsal Column Nuclei in Macacus Rhesus. A. Ferraro and S. E. Barrera.—p. 76.

\*Familial Schilder's Disease. A. Meyer and T. Tennent.—p. 100.

Physiologic Pathogenesis of Epilepsy. W. G. Lennox.—p. 113.

Anatomic Localization of Hypothalamic Center for Regulation of Temperature. C. H. Frazier, B. J. Alpers and F. H. Lewy.—p. 122.

**Effects of Occipital Lobectomy on Vision in Chimpanzee.**—Spence and Fulton subjected an adolescent chimpanzee to complete extirpation of the left occipital lobe and extirpation of the posterior and lateral portions of the area striata of the right hemisphere. The removal of the entire left area striata resulted in a slight but consistent loss in visual acuity ranging from approximately 5 to 15 per cent at four brightness levels. Following the second operation, which left the animal with only the anterior portion of the right area striata intact, there was complete failure to discriminate a pattern sixteen times as large as that discriminated in the preoperative tests. Rough testing of the visual fields suggested that a right homonymous hemianopia resulted from the first operation, while the second spared only the extreme left peripheral fields; i. e., the temporal halfmoon. The latter result supports the view that the occipital pole of the area striata represents the macular projection area and that the anterior portion of the area striata around the calcarine fissure is the cortical terminus of the extreme peripheral retinal elements.

**Familial Schilder's Disease.**—Meyer and Tennent present the clinical and pathologic records of two brothers suffering from Schilder's disease. Their mother is affected by a progressive spinal condition, the nature of which is still uncertain. Gastro-intestinal troubles preceded by a long interval the nervous disorder of the two brothers. These symptoms are also presented by a third brother who has slight ataxia. There were no histologic changes in the visceral organs to account for the condition of the central nervous system. The pathogenic and etiologic views on Schilder's disease are discussed in the light of the cases investigated. Consideration is given to the theory of primary glial disturbance with especial attention to the difficulties of interpretation of the histologic data. The peculiar distribution of the process in the optic tract is described. It was similar to that described by Scherer in a spontaneous disease in monkeys. The nosologic significance of these symptoms and of "honeycombed" patches, which are found also in Schilder's disease, is discussed as to its broader aspects.

## British Journal of Children's Diseases, London

33: 1-84 (Jan.-March) 1936

Farrago Pyretologica: Medley on Fevers. J. D. Rolleston.—p. 1.

Mantoux Test in Children, with Especial Reference to Home Contacts. G. G. Kayne.—p. 20.

\*Chronic Jaundice in Three Brothers with Hypertrophic Cirrhosis of Liver and Infantile. A. Chand.—p. 31.

Seventeenth Century Cure for Rickets. W. J. Rutherford.—p. 40.

**Chronic Jaundice and Hypertrophic Cirrhosis of Liver and Infantile.**—Chand gives the details of three cases of chronic jaundice with hypertrophic cirrhosis of the liver and infantile in blood brothers. Two of them are alive and the third, the eldest, has since died. The clinical features tally in almost all respects with those of Hanot's cirrhosis and cannot be accounted for by conditions like Banti's disease, acholuric jaundice and chronic infective cholangitis, with or without ordinary cirrhosis. In the patient who died, signs and symptoms of portal cirrhosis appeared in addition to those of biliary cirrhosis a few months before death. Biopsy or necropsy could not be done to study the pathologic changes of the disease.

## British Journal of Physical Medicine, London

10: 183-204 (March) 1936

Histamine Injections in Chronic Rheumatism. B. Shanson.—p. 185.

The Use of Histamine in Rheumatism. F. S. Mackenna.—p. 187.

Evening's Work in an Ultraviolet Radiation Clinic. Mary E. Ormsby.—p. 190.

Gold Treatment in Arthritis. Doris M. Baker.—p. 192.

Red Light Therapy in Schizophrenia. D. E. Cameron.—p. 193.

Physiotherapy in Endocrinology. F. R. B. Atkinson.—p. 196.

## British Medical Journal, London

1: 457-514 (March 7) 1936

Ciliary (Migrainous) Neuralgia and Its Treatment. W. Harris.—p. 457.

Pulmonary Trauma. W. E. Cooke.—p. 461.

Dermoid Cysts and Teratomas of Mediastinum. P. J. Moir.—p. 463.

\*Neonatal Dermatitis. H. Carter and H. A. Osborn.—p. 465.

Dysphagia Due to Unilateral Pulmonary Fibrosis. A. T. Doig.—p. 469.

**Neonatal Dermatitis.**—Carter and Osborn state that "pemphigus neonatorum" is a contagious, subepithelial dermatitis, with an incubation period of one or two days. The lesion is situated under the epidermis and tends to spread centrifugally unless a reliable antiseptic is brought into immediate contact with the infecting organism. As the source of the outbreak may be difficult to find, the disease tends to become epidemic. In a maternity unit in which this disease is endemic, irregular waves occur in the graph of the cases; the number of cases increases with rush work in the department and drops in the quiet periods. The elimination of the source of infection is the ideal and only sound method of checking an outbreak. The disappearance of cases of folliculitis at the same time as those of pemphigus suggested that the etiology is somewhat similar, and histologic sections showed that the lesion of pemphigus was subepithelial and therefore more dangerous. It should be possible by early diagnosis and intelligent and effective treatment to lower and practically to abolish the mortality of the disease. The presence of pemphigus in a maternity unit is an indication that there is a septic focus in or associated with that department, and the septic focus should be found and eradicated. In the outbreak of pemphigus at Mill Road Infirmary at least seventeen strains of *Staphylococcus aureus* and two of *Staphylococcus citreus* were found. Pemphigus neonatorum should have only one phase, that of the small unbroken blister. If treatment by silver nitrate is followed, subsequent phases should not occur. The authors are convinced that this disease is not an acute infective fever but merely a local subepithelial dermatitis, and that local treatment can abort it. They protest against the totally erroneous dogma that fatal cases are doomed from the onset. Fatal cases are due to late diagnosis and inefficient treatment.

1: 515-566 (March 14) 1936

Medical Facts and Fallacies. M. E. Shaw.—p. 515.

Nonspirochetal Infectious Jaundice. R. Bates.—p. 521.

Human Tuberculosis of Bovine Origin in Staffordshire. A. S. Griffith and J. Menton.—p. 524.

Glycosuria of "Lag Storage" Type: Explanation. R. D. Lawrence.—p. 526.

Testosterone. R. Deanesly and A. S. Parkes.—p. 527.

\*Chronic Lead Poisoning Due to Theatrical Grease Paint. E. L. Bartleman and C. Dukes.—p. 528.

**Lead Poisoning Due to Theatrical Grease Paint.**—Bartleman and Dukes report the case of a young actress who developed the classic symptoms of lead poisoning. Blood examination revealed anemia and stippled red cells. The diagnosis was confirmed by the finding of large quantities of lead in the urine and feces. The source of the lead poisoning was traced to the use of a grease paint containing approximately 40 per cent of lead. Traces of lead may be found in the urine of healthy people. This is due to the fact that small quantities of lead are ingested with such food as sausages, meat, beans, cherries and other fruit. This being so, it is obviously unsafe to base a diagnosis of lead poisoning on the discovery of lead in the urine unless this is estimated quantitatively and found to be far above the normal limits. Actually in lead poisoning the patient usually excretes at least 0.1 to 0.3 mg. of lead per liter, and, when figures such as these are reached, there is strong evidence for lead poisoning. In the present patient the quantity of lead excreted was more than ten times the normal, so that the test provided confirmatory evidence. However, in view of the pitfalls that may beset diagnosis by urine

tests it is important to recollect the paramount importance of the clinical history and blood picture. The stippled red blood cell is easily recognized in a Leishman-stained film. Anemia in association with a high stippled red cell count should always suggest lead poisoning. The two conditions in which the blood picture mostly resembles lead poisoning are acholuric jaundice and chronic malaria, in both of which the reticulocyte count is commonly higher than normal. There is a great variability in susceptibility to lead poisoning. The grease paint used by the patient was the same brand as that used by several other members of the cast, but so far no other case of lead poisoning occurred. There were, however, a good deal of ill health and complaints of tiredness and headaches among those of the cast who had used this grease paint previously.

1: 567-624 (March 21) 1936

Oxygen Tents and Nasal Catheters. E. P. Poulton, assisted by T. W. Adams.—p. 567.

Comparison of Cultural Methods for Routine Diphtheria Diagnosis. J. D. A. Gray and Doris M. Stone.—p. 572.

\*Treatment of Bacillus Coli Pyelitis with Alkalis. A. A. Osman.—p. 575.  
Control of Hemorrhage in Endoscopic Prostatic Resection: Note on Clot Retention. E. W. Riches.—p. 578.

Indications for Surgery in Severe Bell's Palsy. A. Tumarkin.—p. 580.  
Derotation of Tibia. R. I. Stirling.—p. 581.

**Treatment of Bacillus Coli Pyelitis with Alkalis.**—Osman declares that the successful treatment of Bacillus coli pyelitis with alkalis depends chiefly on careful attention to detail: essential factors in the method are the production of a copious diuresis and a sufficiently alkaline urine. Clinical trials show that neither alone is effective, though the mechanical flushing out of the urinary passages is probably the more important of the two. A certain degree of alkalinity of the urine tends to inhibit the growth of Bacillus coli-communis, though it may flourish sometimes in exceedingly alkaline urines, especially in vitro. Recent observations suggest that inhibition of growth of the bacilli is more satisfactorily accomplished when the urine has been rendered unusually acid, as with a ketogenic diet. But the precise significance of the reaction of the urine in relation to the growth, or inhibition of growth, is not yet known. Alkaline therapy can be continued indefinitely without harm to the individual or serious interference with the activities of a normal existence; it permits of a normal diet being taken, and, above all, it confers protection against relapses so long as it is conscientiously carried out. Nevertheless, it is of little use in cases with increasing urinary obstruction, as in the later stages of pregnancy, or in cases in which mechanical deformities of the renal pelvis or ureters cause stagnation of urine. It is of doubtful value, therefore, in cases with chronic ulceration and scarring of the renal pelvis, neuromuscular incoordination or congenital anatomic defects of the pelvis or ureters. Such cases can be cured only, if at all, by inhibiting the growth of the localized bacilli, and it is in these cases that the ketogenic diet or mandelic acid should be tried.

### East African Medical Journal, Nairobi

12: 357-386 (March) 1936

Certification of Mental Disorder in Kenya. H. L. Gordon.—p. 358.

Poisonous Effects of Some Local Species of Euphorbia. W. D. Raymond.—p. 369.

### Edinburgh Medical Journal

43: 217-280 (April) 1936

Clinical Recollections and Reflections: I. The Epileptic Fit and the Epilepsies. E. Bramwell.—p. 220.

\*Experimental Glomerulonephritis Produced by Use of Specific Serums. W. M. Arnott, R. J. Kellar and G. D. Matthew.—p. 233.

Paroxysmal Auricular Tachycardia Associated with Primary Cardiac Tumor. A. R. Gilchrist, with pathologic report by W. G. Millar.—p. 243.

Crowd Psychology as Modern Menace: Medicosociological Study. A. J. Brock.—p. 259.

**Glomerulonephritis Produced by Specific Serums.**—Arnott and his associates repeated the experimental production of glomerulonephritis in rabbits in accordance with Masugi's method. They deal principally with the histologic observations in their first group of animals subjected to injections of anti-serum. They anesthetized rabbits of varying breeds with ether, opened the abdomen, cannulated the renal artery on each side and perfused the organs with sterile saline solution until

free of blood. The kidneys were then removed and ground in a mortar. Physiologic solution of sodium chloride was added in sufficient quantity to give a final suspension of from 10 to 30 per cent. Subsequently the suspension was injected intraperitoneally in 10 cc. doses into Aylesbury ducks. This procedure was repeated at intervals of from four to five days on from twenty-five to forty occasions. At the end of this period each duck was anesthetized and the sternum removed. With a wide bore needle as much blood as possible was aspirated from the right ventricle. The blood serum was heated to 56 C. for thirty minutes in order to eliminate natural complement and was then ready for use. The results show that a serum prepared in the foregoing manner causes a glomerulonephritis similar histologically, in all essential features, to human glomerulonephritis. Clinically there is also great similarity, even to the production of hypertension, although the latter point has not yet been established as blood pressure observations were carried out in only one animal. This point is the subject of further research. Further research is also being carried out on the effect of serum prepared by repeated injections of liver tissue. Masugi, working with rats and rabbits, claimed that such a serum caused specific damage to the vessels of the liver, while it did not damage the kidney. The demonstration of an organ specificity in this immune serum would in itself be a matter of considerable importance, as this possibility is generally regarded as unlikely. An immune serum with little or no tissue specificity might cause almost exclusively glomerular damage, because the glomerular capillaries pass through their walls far more diffusible substances than any other group of capillaries in the body. The one point of contact so far established between the mechanism of human glomerulonephritis and that of this experimental glomerulonephritis is the fact that the human disease seems to occur in cases of streptococcal infection in which there is a vigorous antibody response resulting in an unusually intense antigen-antibody reaction while, in the experimental lesion, there is undoubtedly an intense antigen-antibody reaction occurring in the rabbit.

### Glasgow Medical Journal

7: 97-152 (March) 1936

Otosclerosis, Hereditary Congenital Deafness and Senile Deafness, with Especial Reference to Their Pathologic Differentiation. A. A. Gray.—p. 97.

The Later Results of Operations on Stomach and Duodenum. R. Mailer.—p. 109.

### Indian Medical Gazette, Calcutta

71: 121-180 (March) 1936

Etiology of Blackwater Fever. K. V. Krishnan and N. G. Pal.—p. 121.

Atabrine Plasmochin in Treatment of Malaria. D. Manson.—p. 127.

Mass Treatment with Injectable Atabrine. A. T. W. Simeons.—p. 132.

Rheumatic Heart Disease in Bombay Deccan. L. B. Carruthers.—p. 137.

\*Prognostic Value of Variation in the Arneth Count in Cases of Asthma Treated with Autovaccine. L. E. Napier and Dharmendra.—p. 139.

Iron Encephalopathy: Case. L. E. Napier.—p. 143.

Injuries of Skull. H. Smith, with notes on head injuries by P. N. Ray.—p. 145.

**Prognostic Value of Variation in Arneth Count in Cases of Asthma Treated with Autovaccine.**—Napier and Dharmendra discuss the changes in the Arneth counts produced by means of treatment with autovaccine in twenty-five cases of asthma. A vaccine made from the organisms isolated from the sputum was used and a course of six injections was given. The first count was done on admission of the patient to the hospital and the second about two days after the last dose of the vaccine. The Arneth count on the first occasion showed a marked shift to the left. At the second examination the count showed an even more marked shift to the left in three cases, no change in two cases and a decrease in the shift, either slight or marked, in twenty cases. When the variations in the Arneth count on the two occasions are correlated, the relation between the improvement in the condition of the patient and the improvement in the shift to the left in the count becomes prognostic. The initial Arneth count gives little information about the results to be expected from vaccine treatment. The Arneth count after the treatment gives some information on this point. The fall of the Arneth index below 80 seems to



be a favorable prognostic sign. The extent of fall in the index after the treatment gives the most information regarding the prognosis. Among the cases not responding favorably to the treatment, the index sometimes rises and in no case shows a marked fall. In the cases showing temporary improvement, the fall in the index never exceeded 10 points. A fall of 10 or more in the Arneth index after the treatment with auto-vaccine is a good prognostic sign.

### Irish Journal of Medical Science, Dublin

No. 123: 97-144 (March) 1936

- Some Selections from the Transactions of the Cork Medical Society, 1854-1863. R. C. Cummins.—p. 97.  
Dysmenorrhea: The Oldest Theories and the Newest Treatment. D. J. Cannon.—p. 108.  
Enucleation of Pleural Adhesions by Open Operation. A. B. Clery.—p. 122.  
Epidemiology of Typhus Fever: Note. M. P. O'Connor.—p. 128.  
Thyrotoxicosis Complicating Pregnancy: Case. O. Browne.—p. 133.

### Journal of Neurology and Psychopathology, London

16: 193-288 (Jan.) 1936

- Mescaline and Depersonalization: Therapeutic Experiments. E. Guttmann and W. S. Maclay.—p. 193.  
Effective Use of Small Nondehydrating Doses of Epsom Salt in Epilepsy: Study of One Hundred and Nine Cases. A. Wolf.—p. 213.  
Nonalcoholic Polyneuritis Associated with Korsakow Syndrome. L. Minski.—p. 219.  
Survey of Patients in Large Mental Hospital. A. G. Duncan, L. S. Penrose and R. C. Turnbull.—p. 225.  
Recent Advances in Therapeutic (Induced) Malaria. G. de M. Rudolf.—p. 239.

### Journal of Pathology and Bacteriology, Edinburgh

42: 329-540 (March) 1936

- Experimental Production of Chloride Retention by Means of Pneumococci and Other Infections. J. W. S. Blacklock and N. Morris.—p. 329.  
Diphtheria Carriers, with References to Types of Corynebacterium Diphtheriae: Note. May H. Christison, Helen A. Wright and Barbara J. Shearer.—p. 345.  
Production of Toxin by Bacillus Edematis-Maligni (Vibrio Septique). L. E. Walbum and G. C. Reymann.—p. 351.  
Observations Relating to Psychosin Sulfate: Its Action on Bacteria, Toxins, Serum and Red Blood Cells. A. N. Drury, J. A. R. Miles, A. E. Platt, G. Plaut and H. Weil, with note on surface properties of psychosin derivatives by A. R. Hughes.—p. 363.  
Homolografting of Rat Pituitary Grown in Vitro. W. Haymaker and Evelyn Anderson.—p. 399.  
Histogenesis of Neural Tissue in Teratomas. R. A. Willis.—p. 411.  
Role of Bacillus and of "Hetero-Allergy" in Tuberculous Liquefaction. W. Pagel.—p. 417.  
Bronchiectasis and Metaplasia in Lung of Laboratory Rat. R. D. Passey, A. Leese and J. C. Knox.—p. 425.  
Comparison of Certain Media for Cultivation of Tubercle Bacilli from Sputum. S. R. Jamieson.—p. 435.  
Intensification of Voges-Proskauer Reaction by Addition of  $\alpha$ -Naphthol. M. M. Barritt.—p. 441.  
Use of Brilliant Green-Eosin Agar and Sodium Tetrathionate Broth for Isolation of Organisms of Typhoid Group. E. R. Jones.—p. 455.  
Inapparent (Subclinical) Infection of Rat with Virus of Infectious Ectromelia of Mice. F. M. Burnet and Dora Lush.—p. 469.  
Factor in Culture Filtrates of Certain Pathogenic Bacteria Which Increases Permeability of Tissues. D. McClean.—p. 477.

**Rôle of Bacillus and of "Hetero-Allergy" in Tuberculous Liquefaction.**—Pagel is of the opinion that tuberculous liquefaction is an allergic phenomenon. The presence of bacillary bodies is necessary for its development, for these, as an antigenic irritant, give rise to the allergic reaction. The allergic reaction that causes liquefaction of the implanted material seems to be closely connected with tuberculous hypersensitiveness, such as occurs in Koch's phenomenon. It is justifiable to assume that the early stage of tuberculous liquefaction in man follows an increase in the number of bacilli; this provides the irritant requisite for the allergic reaction. The foreign body reaction occurs earlier in tuberculous than in normal animals. In tuberculous hypersensitive animals, moreover, the introduction of an artificial substitute for dead tissue, without tubercle bacilli but containing such substances as develop during their growth in glycerin broth, causes within from four to six days the formation of a granulomatous lesion with giant cells of the Langhans type, which corresponds to an allergic modification of the foreign body reaction (hetero-allergic reaction). These features are absent in the impetuous

allergic reaction that occurs in response to the injection of an artificial substitute for tissue but containing also bacilli. Increase in the protein content of the injected material generally gives similar results. Exceptional hyperergic reaction to the filtrate is a hetero-allergic phenomenon, as proved by the injection of pure protein mixed with glycerin broth. Hetero-allergic reactions in the model experiment do not give any information as to the production of liquefaction by specific substances in the tissues of tuberculous foci, or as to the part played by hetero-allergy in tuberculous liquefaction of man.

### Journal of Tropical Medicine and Hygiene, London

39: 53-64 (March 2) 1936

- The Anemia Problem, with Especial Reference to Pernicious Anemia: Therapeutic Critique. E. A. Sharp.—p. 53.  
Quantitative Estimation of Glucose by Biologic Methods. M. Douglas.—p. 57.

39: 65-76 (March 16) 1936

- The Anemia Problem, with Especial Reference to Pernicious Anemia: A Therapeutic Critique. E. A. Sharp.—p. 65.  
Cellular Reaction to Bacillus Lepae. E. Muir.—p. 70.

### Lancet, London

1: 521-582 (March 7) 1936

- Some Observations on Peptic Ulcer. D. T. Davies.—p. 521.  
Further Observations on Role of Toxin in Staphylococcal Infection. F. C. O. Valentine.—p. 526.  
Operation for Femoral Hernia by a Midline Extraperitoneal Approach: Preliminary Note on Use of This Route for Reducible Inguinal Hernia. A. K. Henry.—p. 531.  
\*Temporary Paralysis of Diaphragm in Treatment of Pulmonary Tuberculosis. L. O'Shaughnessy and J. H. Crawford.—p. 534.  
Accidental Transmission of Malaria by Blood Transfusion. W. L. Thomas and S. Keys, with note by S. C. Dyke.—p. 536.

**Paralysis of Diaphragm in Treatment of Tuberculosis.**—O'Shaughnessy and Crawford do not consider phrenic evulsion, discreetly and carefully performed, a dangerous operation but have adopted phrenicosthasty, the procedure of which is described, on quite other grounds. They have observed an increasing number of patients with bilateral phthisis for whom some form of bilateral collapse operation would offer a prospect and the only prospect of cure, but a paralyzed diaphragm has ruled out such a possibility. In the young patient a paralyzed hemidiaphragm does not produce signs of respiratory distress. But it has been suggested recently that in middle age paresis of the diaphragm may constitute a more serious handicap: Kochs found that phrenicotomy produced a greater reduction of vital capacity in middle aged than in young patients. The possible detrimental effects of the paralysis on cardiovascular function in later life must also be borne in mind, and the recent experiments of Nissen and Wustmann on the effect of diaphragmatic movement on the caval blood flow are of interest in this connection. The authors therefore believe that it is of probable advantage for the patient to have a healed tuberculous lesion and a moving diaphragm; for, should the lesion again become active, the patient is a suitable subject for any form of treatment that may be necessary, and if, on the other hand, the disease remains permanently arrested, there is no chance of his having to pay for this benefit by an impairment of respiratory or cardiovascular function in later life.

1: 583-642 (March 14) 1936

- Nutrition Question. R. Hutchison.—p. 583.  
Some Observations on Peptic Ulcer. D. T. Davies.—p. 585.  
\*Skin Affections Underlying Pruritus of Vulva and Anus: Review of Three Hundred Cases. Elizabeth Hunt.—p. 592.  
Methylene Dichloride Intoxication in Industry: Report of Two Cases. H. Collier.—p. 594.  
\*Intraspinal Injection of Alcohol for Intractable Pain. W. R. Russell.—p. 595.  
Treatment of Ancylostomiasis in Indian Seamen. A. H. Walters, under the direction of G. C. Low and P. H. Manson-Bahr.—p. 599.  
Technic of Intravenous Anesthesia. R. Jarman and A. L. Abel.—p. 600.

**Skin Disorders Underlying Pruritus of Vulva and Anus.**—According to Hunt, the diagnosis of a disorder of the skin, when it is localized on or around the external genitalia and anus, may be and often is extraordinarily difficult, for the distinctive characters of the eruptions are wont to be modified in this moist warm area, and it is sometimes only by the discovery of typical lesions at other sites that the diagnosis can

be made with confidence. The need for accurate diagnosis and for the differentiation of the various skin disorders that may give rise to vulval and anal irritation must be apparent not merely for the purposes of treatment but also for the reassurance of the patient and for guidance in avoiding recurrences. An analysis of 300 cases of pruritus falls into seven groups: general disorders of the skin (lichen planus, seborrheic dermatitis, psoriasis, eczema and leukodermia), dermatitis traumatica and venenata, local causes, parasites, general constitutional diseases, psychic and miscellaneous (lichenoid eruption, senile pruritus and hygienic laxity). The most striking feature was the large number of cases presenting well known disorders of the skin, and in particular the excessive proportion of cases of lichen planus—an eruption that may affect skin and mucous membrane and usually stated to occur rarely on the vulva.

**Intraspinal Injection of Alcohol for Intractable Pain.**—During the last eighteen months Russell has used the intraspinal injection of alcohol in attempting to relieve severe pain in eighteen cases, and in several of these the result of the injection has been satisfactory. The dangers of the injection, the technique for the relief of sacral pain and the method of relieving lumbar or thoracic pain are discussed. In the cases treated the injections given were in many instances larger than those advised. The first injections were small (0.5 cc) but had no effect in relieving severe pain, hence in cases of advanced cancer the author has given injections of 1 cc or more. Most of the patients treated had advanced malignant disease, and most were in the cancer wards of a hospital for patients with incurable diseases.

### Medical Journal of Australia, Sydney

1: 253 282 (Feb. 22) 1936

- Tuberculosis Survey of a Papuan Village F W Clements—p 253  
The Educational Aspect of Deafness H Earlam—p 259  
Treatment of Familial Acholuric Jaundice S O Cowen—p 265  
Brucella Infections: Frequency of Agglutinins for Brucella Abortus in the Population at Large A E Platt—p 268  
Occurrence of Gravis Type of Diphtheria Bacillus in Victoria T S Gregory—p 269

1: 283 316 (Feb. 29) 1936

- Survey of Incidence of Taenia Saginata Infestation in the Population of the State of Victoria from January 1934 to July 1935 W J Penfold H B Penfold and Mary Phillips—p 283  
Fracture of the Leg Below the Knee H S Stacy—p 285  
Fetal Death C A C Leggett—p 288  
Psychoanalysis and General Practice R C Winn—p 293  
The Oath of Hippocrates and Its Use at the Present Day J G Avery—p 299

1: 317 350 (March 7) 1936

- Diagnosis of Taenia Saginata Infestation W J Penfold and H B Penfold—p 317  
Regional Ileitis: Report of Case K Ross—p 321  
Contributions of Psychoanalysis to General Medicine R C Winn—p 323  
Australian Typhus: Report of Fatal Case J C Hughes, O A Diethelm and A H Tebbutt—p 327

### Medical Press and Circular, London

192: 293 314 (April 1) 1936

- Physiologic Basis for Modern Treatment of Fractures A L d Abreu—p 299  
Some Clinical Aspects of Carcinoma R S Woods—p 302  
\*Hypervitaminosis as Cause of Ill Health in Country Children W A Ball—p 303  
Progress and Problems W M Eccles—p 304

**Hypervitaminosis in Country Children.**—Ball discusses the occurrence of cases which in towns are deficiency diseases but which occur in the country in the opposite type of patient. Three types of case (anemia, phlyctenular conjunctivitis and debility) are differentiated from the clinical point of view. The patients usually respond to an increase in the carbohydrates in the form of sweets and cakes, and diminution, or even absence, of vitamins in the form of cod liver oil and fresh fruit. The children that were reared in the best conditions were often of poor type, while those who were reared on a definitely deficient diet were healthy and rosy cheeked. In this series of cases the three types of patients that are successfully treated in towns with sunshine and an increase of vitamins were successfully treated in the country with the exactly opposite treatment. It would seem that an excess of vitamins can bring about the same clinical picture as a lack and this stresses the danger of indiscriminate dosing with cod liver oil and the like.

### South African Medical Journal, Cape Town

10: 119 166 (Feb. 22) 1936

- To the Newly Qualified A Cox—p 119  
The Education of Medical Men P M Latham—p 121

### Tubercle, London

17: 289 336 (April) 1936

- The Aftercare of the Tuberculous in London N D Bardswell—p 289  
Id L C Marx—p 294  
Id J G Johnstone—p 297  
Report of Postmortem Examination of Apicolysis F A H Simmonds—p 307  
Value of Roentgen Rays in Diagnosis of Renal Tuberculosis C G Sutherland and W F Braasch—p 309

### Chinese Medical Journal, Peiping

50: 97 200 (Feb.) 1936

- Decompression of Gastrointestinal Tract I Use of Certain Simple Mechanical Appliances for Control of Abdominal Distention H H Loucks and H C Fang—p 97  
\*Tubal Factor in Sterility Among Chinese Women G King—p 111  
Isolation of Treponema Pallidum from Gummata of Skeletal Muscle  
Report of Four Cases Observed in North China C K Hu and H C Li—p 123

**Tubal Factor in Sterility Among Chinese Women.**—King investigated 272 cases of sterility in Chinese women by means of uterotubal insufflation, using air or carbon dioxide. There were 165 instances of primary and 107 of secondary sterility. The result of insufflation depended to a certain extent on the method used. Normal tubal patency and absolute tubal nonpatency could be demonstrated with equal ease by either method, but impaired patency associated with tubal spasm, stricture or stenosis could not be clearly differentiated by the simple air insufflation method, whereas it was plainly shown by the kymographic method. Chronic inflammatory disease of the tubes was responsible for practically all cases of impaired patency or complete nonpatency. The gonococcus was comparatively rarely obtained in smears, owing to the chronicity of most of the cases. In the majority of the cases of nonpatency, however, there was a history suggestive of gonococcal infection in either the patient or her husband, commonly in both. Tubal insufflation possesses therapeutic as well as diagnostic value. Pregnancy is known to have occurred in sixteen patients following insufflation. Since only between 30 and 40 per cent of all cases of insufflation could be followed up, the actual incidence of pregnancy in the series must be higher than this.

### Japanese Journal of Experimental Medicine, Tokyo

14: 1 84 (Feb. 20) 1936

- Studies on Skin Reaction Caused by Schistosoma Japonicum, Cutaneously Applied on Animals J Watarai—p 1  
Investigations on Rapidity of Motility of Bacteria K Ōgiuti—p 19  
Studies on Mode of Development of Bacteria in Single Cell Culture on Film of Medium I Observations on Mode of Development on Mycobacterium and Biologic Meaning of Its Granules K Hu—p 29  
Id II Observations on Mode of Development of Diphtheria Bacilli K Hu—p 59  
Id III Observations on Mode of Development of S and R Forms of Bacteria K Hu—p 67  
Ultrafiltration Experiments on Virus of Rabies (Virus Fixe) H Yaoi, K Kanazawa and K Sato—p 73  
New Cestode Species, Amphihina Japonica S Goto and N Ishii—p 81

### Journal of Oriental Medicine, Dairen, South Manchuria

24: 15 30 (Feb.) 1936

- Pathologic Anatomic and Pathologic Histologic Studies of Kala Azar Mo Ten Ser—p 15  
Influence of Sympathetic Nervous System in Experimental Production of Hyperplasia of Intima of Arteries Kan Jin Nan—p 17  
Development of Mast Cells in Organs of Oral Cavity and in Tissues of Normal Rat K Imanishi—p 18  
History of Bacteria Artificially Introduced into the Body and Factors of Infection Report V Ability of Tubercle Bacilli to Pass Through the Kidneys of Healthy and Morbid Rabbits and Significance of Cold in Experimental Renal Tuberculosis N Nishikawa—p 20  
Avian Pygomelus T Hosaka—p 21  
Statistical Observation on Measles in Dairen Y Morita—p 22  
Sensitivity of Suprarenalctomized White Rats to Cyanide, Morphine, Tribrom Ethanol and Histamine Following Administration of Suprarenal Substance and Sulfur M Hashimoto—p 23  
Lower Jaw in Chinese Children, Various Masses and Indexes H Sakai—p 24  
Experimental Studies of Blood Transfusion on Blood Pictures M Okamoto—p 26  
Clinical Studies of Blood Transfusion on Blood Pictures M Okamoto—p 27  
Nucleus Fastigii of Cerebellum Experimental Study S Ushijima—p 28

**Annales de Dermatologie et de Syphiligraphie, Paris**

7: 225-336 (March) 1936

Painful Nodule of Ear. W. Dubreuilh.—p. 225.

\*Chrysocyanosis (Cutaneous Pigmentation After Injection of Gold Salts).

F. Cardis and M. Conte.—p. 229.

Larval Form of Acne Conglobata in Patient with Hyperthyroidism,

Acromegaly and Probable Hypophyseal Tumor. P. Pinetti.—p. 245.

Tuberculin Drop Method as Diagnostic Method. M. J. Goutina.—p. 262.

**Pigmentation of Skin Following Gold Treatment.**—The pigmentation of the skin occurring in the course of gold treatment is, according to Cardis and Conte, a relatively new disorder. Age appears to have no influence on its appearance, but it is much more common in women than in men. The nature of the gold salt is relatively immaterial, but the dose is important since the cutaneous pigmentation has generally appeared after enormous doses. It is more common in blondes than in brunettes. As a rule, the onset is insidious and progressive and difficult to determine. In general, it appears after one or two years of gold therapy. The pigmentation affects especially the eyes and the face. The degree of pigmentation varies from day to day. It develops almost always either toward a stationary position or a progressive aggravation. Examination of a fragment of skin has been performed in three instances to the knowledge of the authors. Small grains of gold have been found in the pigmented skin. Small plaques of histiocytes with pale nuclei and innumerable granulations have been found in the spleen. Other viscera have been found similarly infiltrated with gold. No certain treatment is yet known. The authors conclude that it is wise to avoid large doses of gold, especially in blonde women, who are particularly susceptible.

**Schweizerische medizinische Wochenschrift, Basel**

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Lymphatic Apparatus. E. Ludwig.—p. 349.

New Ergot Alkaloid. A. Stoll and E. Burckhardt.—p. 353.

\*Genesis of Air, Sea and Train Sickness in New Light. K. Lenggenhager.—p. 354.

Etiology and Therapy of So-Called Anal Fistula (Chronic Purulent Anal Thrombophlebitis). R. Baumann and K. Blond.—p. 358.

**Air, Sea and Train Sickness.**—Lenggenhager cites observations and experiments which indicate that sea, air and train sickness is not caused by the labyrinth but by the fluctuations in the pressure and traction exerted on the large nerve plexuses of the sympathetic system in the epigastric region. Regarding the treatment he says: 1. The horizontal position of the body greatly protects against sea or air sickness. 2. An empty stomach and small intestine reduce the shifting and pressure changes in the viscera. To be sure, this advantage is interfered with by the fact that a newly filled stomach produces a pleasant drowsiness (reduced sensitivity of the nervous system). The latter factor explains why persons on a sea voyage usually feel well shortly after eating. 3. Strong lacing of the abdomen slightly reduces the shifting of the viscera. 4. Substances that have a paralyzing effect on the nerves inhibit sea sickness. However, since irritation of the vagus is not the only cause of sea sickness, combination preparations are advisable.

**Riforma Medica, Naples**

52: 495-528 (April 11) 1936

\*Eleomas and Subcutaneous Lipoid Necrosis. E. Repetto.—p. 495.

Syphilitic Myocarditis. L. Lami.—p. 500.

**Eleomas and Subcutaneous Lipoid Necrosis.**—Repetto reports a case of subcutaneous eleomas following subcutaneous injections of camphor in oil. The patient never had syphilis, tuberculosis or local pyogenous infection that could be considered predisposing factors for the development of the tumors. Because of the analogy that exists between subcutaneous lipoid necrosis and subcutaneous eleomas in their clinical evolution and histologic picture, the author believes that eleomas are a type of subcutaneous lipoid necrosis. The oil may act in these cases as a local traumatic factor that favors the development of the tumors, which is due to endocrine disturbances. In the author's case the evolution of the tumors was intensified during

menstruation. This fact in an obese patient indicated a possible relation between the endocrine disturbances, especially ovarian and thyroid disorders in his case, and the development of the subcutaneous lipoid tumors.

**Archiv für Verdauungs-Krankheiten, Berlin**

59: 129-300 (April) 1936. Partial Index

\*Studies on Rational Permanent Treatment of Pernicious Anemia. N. Henning and H. Keilhack.—p. 129.

Studies on Digestion of Cellulose: New Method for Quantitative Determination of Cellulose and Its Use in Physiology of Digestion. A. Schmidt-Ott.—p. 143.

Experimental and Clinical Investigations on Porphyrin. L. Lorente and H. Scholderer.—p. 188.

Significance of Catalase (and Triboulet) Reaction for Diagnosis and Prognosis of Intestinal Diseases. S. Kemp and T. Thuge Andersen. C'en.—p. 219.

**Rational Treatment of Pernicious Anemia.**—Henning and Keilhack point out that the usual liver and stomach therapy has some disadvantages. If liver is given constantly, the patients develop an aversion to its taste, and the same applies to the liver and stomach preparations. The injection treatment is likewise unsuitable for permanent treatment. The chief aims that are to be realized in the continuous treatment of pernicious anemia is that the treatment is not too expensive, that it can be carried out by oral medication and that no aversion develops in case of continued use. In order to realize these aims the authors made further studies on Castle's intrinsic and extrinsic factors. The fact that the intrinsic factor is produced by the glands of the antrum permitted a considerable reduction in the quantity of stomach extract that is necessary for effective treatment. Instead of giving from 30 to 50 Gm. of stomach extract, they found that 5 Gm. of a powder prepared from the mucous membrane of the antrum was sufficient when it was combined with the necessary amount of extrinsic factor. It was also determined that the extrinsic factor does not have to be meat but may be vegetable protein. A preparation that combines the intrinsic factor in the form of antrum extract and the extrinsic factor in the form of vegetable protein was found effective in nine cases of pernicious anemia. Control tests indicated that only the combination of these two substances acts in the manner indicated by Castle's theory. The small amount of organ extract practically eliminates the problem of a possible aversion of the patient toward the treatment.

**Jahrbuch für Kinderheilkunde, Berlin**

146: 233-292 (April) 1936. Partial Index

Protective Skin Reflexes. A. Peiper.—p. 233.

\*Diagnostic Differentiation of Epilepsy in Children from Pyknolepsy and Salaam Convulsions. Ursula Moeller.—p. 240.

Influence of Pure Vitamin Preparations on Course of Tuberculosis in Guinea-Pigs. R. Stadler and E. Larisch.—p. 253.

Brittleness of Bones in Syphilitic Nursing. W. Mikulowski.—p. 274.

**Differential Diagnosis of Epilepsy.**—Moeller cites methods that have been tried to differentiate the types of convulsions occurring in children. She employed the hyperventilation method, injection of solution of posterior pituitary and alkalization (by means of potassium sodium citrate, until an alkaline reaction of the urine had been obtained). She resorted to these methods in 121 children who had attacks of convulsions. In seventy-eight of these children none of the three methods elicited convulsions. Some of these children were not subject to attacks in the course of their stay at the clinic, but the anamnesis disclosed that they had had convulsions, whereas in others the convulsions were sequels of encephalitis or were caused by a toxic hydrocephalus, cerebral tumor or cerebral deformities. In eight of the remaining forty-three children, salaam convulsions occurred. In five of these eight children it proved possible to elicit the typical salaam attacks by means of injection of solution of posterior pituitary. Hyperventilation and alkalization were not tried in these children. Of fifteen children with pyknolepsy, fourteen developed pyknoleptic attacks following hyperventilation. Injection of solution of posterior pituitary as well as alkalization always gave negative results in this group of patients. However, alkalization elicited or increased the convulsive attacks in nine out of twenty children with genuine epilepsy; in six others the result was doubtful and in the remaining five entirely negative. The author con-

cludes that by means of one of the three tests (injection of solution of posterior pituitary, hyperventilation and alkalization) it will be possible to determine the nature of convulsions in many cases.

### Klinische Wochenschrift, Berlin

15:473-504 (April 4) 1936. Partial Index

\*Functional Diagnosis of Aortic Disorders. H. Ude.—p. 476.

\*Increase of Blood Pressure in Adrenal Stimulation and Hyperadrenalemia. K. Kuré, S. Okinaka, K. Ohshima, T. Shimamoto and D. Okamura.—p. 477.

Nature of Reducing Substance in Brain. A. Bonsignore.—p. 483.

Clinical Contribution to Question of Functional Disturbances of Cardiac Conduction. H. Marzahn.—p. 486.

Hypoplastic Diabetes of Young Persons. S. de Candia.—p. 488.

Question of Pigment Hormone and of Antidiuretic Principle of Hypophysis. M. B. Sulzberger.—p. 489.

**Diagnosis of Aortic Disorders.**—Ude points out that formerly the diagnosis of aortic sclerosis was based on such signs as the character of the second aortic sound, the amplitude of the blood pressure and the roentgenologic aspects. Later, various methods were devised to determine the volume elasticity. These were based on studies in which the mutual dependence of the factors controlling the circulation was mathematically formulated. Since most of the latter methods require considerable time, the author devised a simpler method which, although it does not give definite figures, nevertheless indicates the presence of changes in the aortic wall. He points out that the speed of the pulse wave passing along the aortic tube depends on two factors, the pressure in the arterial system and the elasticity of the arterial wall. The pulse wave that originates in the heart reaches sites where it can be measured; namely, at the right wrist and at the femoral artery in the flexure of the groin. These pulse waves have in common only the short section to the branching off of the innominate artery. If vascular changes exist on the way from the aorta to the groin, but not on the way to the radial, there must be a difference in time of arrival of the pulse wave at the wrist and in the groin. Since blood pressure changes practically have the same effect throughout the system, they do not influence the time difference in the arrival of the pulse waves. However, isolated changes in the aorta can be detected in this manner. Cases in which there is sclerosis of the arteries of the arm must of course be excluded. These sclerotic changes can be detected by palpation. Another important factor for a comparison of the time of arrival of the pulse wave at the wrist and in the groin is a constant ratio in the length of the two arterial tracts. In normally proportioned subjects this is always the case, and others must be excluded from this test. The author determined the time difference in the arrival of the pulse wave at the right wrist and in the groin on healthy persons and on patients with various defects of the aorta (aortic sclerosis and syphilitic aortitis). A tabular report of the results indicates how clearly changes in the aortic wall manifest themselves by a time difference. Aortitis and sclerosis show the same behavior, which is understandable when it is considered that in both cases the elasticity of the aortic wall is impaired. Independence from the blood pressure was proved by control tests.

**Increase of Blood Pressure in Adrenal Stimulation.**—Kuré and his associates point out that, whereas some investigators observed a hyperadrenalemia in essential hypertension, others denied it, and that it has been repeatedly determined that atropine exerts a favorable influence on hypertension. These and other problems induced the authors to investigate the reliability of the method used for the determination of adrenalemia, the relation between increased blood pressure in case of adrenal stimulation and hyperadrenalemia and finally the influence of atropine on hypertension. The results of their investigations indicate that the method, which had been employed for the determination of hyperadrenalemia, is sufficiently exact. They found further that the stimulation of the splanchnic nerve, particularly of its spinal parasympathetic fibers, always produces a noticeable increase in the blood pressure and hyperadrenalemia. Increase in blood pressure and hyperadrenalemia usually run parallel, but occasionally they differ considerably. The increase in blood pressure may be considerable in the case of slight hyperadrenalemia and vice versa. The stimu-

lation of the splanchnic terminations in the adrenals produced similar results. It appears that the increased blood pressure in the presence of slight hyperadrenalemia is due to a functional disturbance of the adrenals. The authors cite explanations that have been given by other investigators and also describe some of their own observations, and suggest that the adrenals eliminate a blood pressure increasing substance, which does not produce an epinephrine reaction with the method that was used for these tests. They assume that in certain cases the adrenals secrete a substance that exerts a stronger effect on its own vessels than on the vessels of the ear of the rabbit, or that it acts on other incretory glands and only secondarily on the vessels. Whether this substance originates in the cortex or in the medulla of the adrenals is still unknown. To be sure, these observations do not prove that every essential hypertension is caused by a hyperfunction of the adrenals. It was determined further that atropine has a paralyzing effect on the splanchnic terminations and thus inhibits blood pressure.

### Medizinische Klinik, Berlin

32:473-512 (April 9) 1936. Partial Index

Clinical Aspects of Gastroduodenitis. G. E. Konjetzny.—p. 473.

Course of Regeneration of Muscle Fibers After Impairment of Muscular Tissue. A. Schmincke.—p. 475.

Rickets and Premature Ossification of Cranial Sutures. A. Materna.—p. 478.

\*Is Endo-Urethral Electrotomy an Advance in Surgical Treatment of Hypertrophy of Prostate? H. Wildegans.—p. 484.

Aspects of Cranial Osteomas and Frontal Hyperostosis. E. Schneider.—p. 487.

\*Sternal Puncture in Diagnosis of Leukemias and Related Disorders. H. Schulten.—p. 490.

**Endo-Urethral Electrotomy for Prostatic Hypertrophy.**—Wildegans says that the endo-urethral punch methods (Young, Caulk) are not in use in Germany, but that McCarthy's method of electrotomy is employed. It is performed either with McCarthy's electrotome or with the instrument of Heynemann-von Lichtenberg. He emphasizes that electrotomy is not an intervention that can be done without preparation, but he stresses that it requires the same preparation as does a prostatectomy. He considers unsuitable for electrotomy all patients with advanced intoxication by urivable substances. Moreover, a vesical fistula should, if possible, be avoided prior to electrotomy. The possibility of free movement of the instrument in the posterior urethra and good vision are essential. The author regards as unsuitable for resection patients who always have hemorrhages in the course of the introduction of the cysto-urethroscope. It is also important that the urinary tract is free from severe infection. Advanced cystopyelitis-nephritis and infections in the region of the prostate and of the seminal vesicles contraindicate endo-urethral treatment. The author regards the isolated hypertrophies of the median lobe and the rarer pedicled adenomas at the neck of the bladder as best suited for the electrotomy. He says that the intervention should be more canalizing than excavating and he thinks that the selection of the correct sites for resection is more important than the mass of the resected tissue. The opinion of McCarthy and Davis that the endo-urethral method is applicable in 90 per cent of prostatic changes is not shared by the author. He points out that, because it is only a palliative method and does not promise anatomic cure, the endo-urethral therapy cannot replace the radical operation. He thinks that a final evaluation of the endo-urethral electrotomy is not possible as yet, but he regards it nevertheless as a considerable advancement in the treatment of hypertrophy of the prostate.

**Diagnostic Value of Sternal Puncture.**—Schulten demonstrates that the examination of a specimen of bone marrow which has been obtained by sternal puncture does not clarify all obscure hematologic cases. For instance, in chronic myeloid leukemia the bone marrow specimen withdrawn by sternal puncture usually provides but little information. To be sure, the number of myeloblasts and of premyelocytes is usually increased, but it is often difficult to determine how many come from the admixed blood. Moreover, the cases with large numbers of leukocytes usually cause no diagnostic difficulties, but even the subleukemic and the aleukemic myeloses can be detected quite readily by a thorough examination of the blood. If myeloblastic leukemias are accompanied by greatly increased

leukocyte values, their recognition is not difficult, except that there may be doubts whether a lymphatic or a myeloblastic leukemia exists. Clinical and hematologic signs, however, usually will permit a differentiation. The situation is entirely different if the leukemia is temporarily or permanently aleukemic. In these cases, sternal puncture may be of considerable diagnostic help. Other conditions in which sternal puncture may be of value are the lymphatic and myeloblastic leukemias and multiple myeloma.

### Wiener Archiv für innere Medizin, Vienna

28: 161-320 (Feb. 10) 1936. Partial Index

- Chronic Tuberculous Polyarthropathias (Poncet Rheumatism) as Touchstone of Bacillæmia Problem. W. Berger and P. Ludewig.—p. 161.  
Roentgenologic Analysis of Constipation. R. Pape.—p. 181.  
Large Doses of Galactose in Normal and Pathologic Conditions. Martina Bescós.—p. 197.  
\*Method of Fractional Withdrawal of Duodenal Contents at Short Intervals: Clinical Examination of Pancreatic Function: C'm. W. Berger, J. Hartmann and H. Leubner.—p. 211.  
Clinical Aspects of Extrasystolic Allorhythmia. V. Bloch.—p. 229.  
\*Subfebrile Temperatures. E. Lauda.—p. 271.

28: 321-480 (April 27) 1936. Partial Index

- \*Subfebrile Temperatures. E. Lauda.—p. 383.  
Hyperglycemia and Glycosuria. A. Edelmann and G. Singer.—p. 397.  
Diagnostic Value of Serum Coagulation According to Weltmann. R. Teuff.—p. 415.  
\*Glutamic Acid as Substitute for Sodium Chloride. F. Mainzer.—p. 439.  
Anemia and Anoxemia of Cardiac Muscles. K. Paschke.—p. 447.

**Test for Pancreatic Function.**—Berger and his associates describe a method which makes possible the determination of the action of the pancreatic ferment in the duodenal contents. The procedure is a functional test and is suited for studies on the physiologic and pathologic aspects of the external secretion of the pancreas. The duodenal contents are withdrawn by means of a tube at short intervals (every five minutes or, if the flow of the juice is profuse, every two or three minutes). This fractional withdrawal is continued for several hours. It is done while the patient is fasting, as well as after an oil tolerance test. The authors show that the exactness of this method surpasses that of other functional tests of the pancreas. It discloses disturbances of the pancreas (hypofunction as well as hyperfunction), which could not be detected by other methods. Moreover, by the use of the oil stimulus it makes possible the examination of the function of the gallbladder. This is important in view of the frequent concurrence of diseases of the biliary tract and the pancreas. The method makes possible at the same time the macroscopic, microscopic and bacteriologic examination of the pancreatic juice, the vesical and hepatic bile and the duodenal juice in their mixtures in the duodenum. The prolonged fractional withdrawal is less trying for the patients than may be assumed on first sight, but the efforts involved in the examination are considerable. The authors concede that the method still has defects, but they think that some of them can be eliminated. Nevertheless, they maintain that even in its present form the method has great value.

**Subfebrile Temperatures.**—Lauda designates as subfebrile temperatures slight increases in the body temperature which usually persist for long periods. He stresses that, whereas in some cases they differ from true fever only in degree, in other cases they differ from it in the essentials. In the presence of kryptogenic subfebrile temperatures, the first thought is usually of an infectious toxic process, quite often of tuberculosis, but other mitigated chronic inflammatory and septic processes are taken into consideration (tonsillitis, sinusitis, bronchitis, cystitis, pyelitis and so on). Moreover, febrile diseases, such as *Brucella* abortus infection and lymphogranuloma, may cause subfebrile temperature, and obscure neoplasms, such as hypernephroma, must be thought of. The author calls attention to protracted periods of increased temperature after febrile diseases, particularly after influenza. The protracted subfebrile temperatures after infectious diseases are most frequent in patients with an unstable sympathetic nervous system. These types of persons are also occasionally subject to a hyperthermia that is not a postinfectious condition. They are free from any pathologic condition that might result in increased temperature; the subfebrility is merely one of several signs of nervousness. These persons usually are characterized by vasolability, by rapid

changes from reddening to pallor and from a sensation of heat to chills, and by cold extremities, dermatographism, profuse sweating, tachycardia, tremors and diarrhea. Their moods are unstable and they are irritable and subject to depression. The increased temperatures may persist for months and even for years, but they may also disappear for a while and then return again. The definite diagnosis of the increased temperatures that are the manifestation of an unstable sympathetic nervous system may cause considerable difficulties. It may prove difficult to differentiate this condition from hyperthyroidism and tuberculosis. The author thinks that, on the whole, tuberculosis is diagnosed too often merely on the basis of increased temperatures and, as a result, many persons are sent to sanatoriums and subjected to treatment when they do not need it.

**Glutamic Acid as Substitute for Sodium Chloride.**—Mainzer directs attention to the efforts that have been made to find a substitute for table salt. It was the chief aim to replace the chlorine ion by a harmless ion that would have approximately the same seasoning effect. Several salt substitutes were prepared in which the chlorine ion was replaced, but the replacement of the equally objectionable sodium ion was not at all or only partly realized. The author cites factors which indicate that the disturbance in the renal function is highly important for the elimination of the sodium, chlorine and bicarbonate ions. He searched for a "salt substitute" that would meet the following requirements: 1. It should have the capacity to season. 2. It should resist meteorological conditions, particularly the dampness of the air. 3. It should be harmless for the organism. 4. It should be free from inorganic ions that tax the kidney. 5. It should be eliminated in a form readily managed by the kidney. He thinks that glutamic acid fulfils these requirements. After giving the chemical structure and describing the physical characteristics of the acid and its neutral salts, he says that animal experiments revealed that it causes no pathologic changes in kidney, urine or blood pressure. The monosodium salt has a strong seasoning effect (seven times stronger than sodium chloride) and is widely used for seasoning purposes in China and Japan. However, for the diet of patients with renal disease the author recommends the free *D*-glutamic acid rather than its sodium salt, because it is desirable to eliminate the sodium ion. To be sure, the seasoning capacity of the acid is considerably less than that of the sodium salt, but the quality of the taste is the same. The author is convinced that glutamic acid will exert no unfavorable influence on the renal function, but it will be necessary to examine whether it has an indirect influence on the elimination of other substances.

### Wiener klinische Wochenschrift, Vienna

49: 417-448 (April 3) 1936. Partial Index

- \*Treatment of So-Called Idiopathic Dilatation of Esophagus and Esophagostomy. H. Heyrovsky.—p. 417.  
Innovations in Technic of Obliteration of Hemorrhoids. H. Schur.—p. 427.  
Experiments on Treatment of Barbitol Poisoning. R. Fischer and H. Salzer.—p. 429.  
Clinical Observations in Treatment of Hypertrophy of Prostate. H. Angerer.—p. 430.

49: 449-480 (April 10) 1936. Partial Index

- Relation of Hair Growth and of Falling Out of Hair to Endocrine System and Possibility of Endocrine Therapy of Baldness. R. O. Stein.—p. 449.  
Lymphogranulomatosis (Hodgkin's Disease) and Nervous System. E. Risak.—p. 452.  
\*Inhibition of Menstruation by Estrogenic Substance. B. Zondek.—p. 455.  
\*Treatment of So-Called Idiopathic Dilatation of Esophagus and Esophagostomy. H. Heyrovsky.—p. 461.  
Experimental Contributions to Therapy of Diphtheria. A. Ebel and H. Mautner.—p. 464.  
Treatment of Congenital Luxation and Subluxation of Hip Joints Without Fixation. F. Bauer.—p. 466.  
Diseases of Rectum. W. Zweig.—p. 466.

**Treatment of Idiopathic Dilatation of Esophagus.**—Heyrovsky says that so-called idiopathic dilatation of the esophagus has been designated also as chronic cardiospasm, spasmogenic dilatation of the esophagus, mega-esophagus, achalasia and so on. These various terms are applied to a disorder in which dilatation and lengthening of the esophagus results

from a functional inhibition of the passage of food through the cardia. The author is convinced that only dilation of the cardia or a surgical intervention can effect a cure and he says that in milder cases dilation of the cardia from the opened stomach according to von Mikulicz or cardiomyotomy according to Heller is advisable. As a third intervention for cases of diffuse dilatation of the esophagus he mentions a method of cardioplasty in which Marwedel and Wendel utilized the principle of the Heineke-Mikulicz operation for pylorostenosis. After citing figures regarding the efficacy of these methods, he points out that he himself resorted to an anastomosis between the abdominal portion of the esophagus and the fundus portion of the stomach. He exposes the cardia, mobilizes the lengthened and dilated esophagus, draws it into the abdominal cavity and anastomoses it with the stomach. He performed two esophagogastrostomies about twenty-five years ago, in both of which the conditions were favorable for subphrenic anastomosis. Roentgenologic controls after more than ten years disclosed that the dilatation of the esophagus had completely disappeared. Later this anastomosis was done in a greater number of cases, either by the abdominal or by the transpleural approach. The evaluation of the results obtained by himself and others convinced the author that subphrenic esophagogastrostomy is the best method for severe cases.

**Inhibition of Menstruation by Estrogenic Substance.**—Zondek found that the normal menstrual cycle can be influenced by the administration of estrogenic substance, in that the menstruation is postponed. To produce this result it is necessary to administer at least 70,000 mouse units, but if 200,000 or 300,000 mouse units is given the result is more certain; that is, at least one third of the quantity of substance necessary for the proliferation of the uterine mucosa must be administered to produce amenorrhea. The earlier the administration is begun (best immediately after menstruation) the more certain is the action. The duration of the resulting amenorrhea is not in proportion to the dose. The menstruation is retarded by from six to seventy days. Estrogenic substance can inhibit or entirely prevent the premenstrual proliferation of the uterine mucosa. If estrogenic substance (at least 200,000 mouse units) is given at the premenstrual phase, the further proliferation of the uterine mucosa is retarded. Estrogenic substance inhibits also the development of the corpus luteum, so that a parenchymatous degeneration and shrinkage may be the result. The gonadotropic hormones of the anterior lobe of the hypophysis are involved in the mechanism of the inhibition (perhaps shift in the proportion of follicle stimulating to luteinizing factor). This is indicated by the increased elimination of the follicle stimulating factor in the amenorrhea produced by the administration of estrogenic substance. The author emphasizes that menstruation is a complex hormone process in which the gonadotropic hormones of the anterior hypophysis as well as the ovarian hormones play a part. He thinks that the production of amenorrhea by estrogenic substance is of clinical value.

### Sovetskiy Vrachebnyy Zhurnal, Leningrad

Feb. 29, 1936 (No. 4) pp. 241-320. Partial Index

- \*Ammonium Chloride Therapy of Edema. I. S. Kanfor.—p. 245.
- \*Functional Cardiac Murmurs. Ya. L. Bystritskiy.—p. 258.
- Effect of Laxatives on Water Balance of Decompensated Cardiac Patients. M. F. Kovaleva.—p. 265.
- Water Balance in Hepatitis. M. N. Egorov.—p. 278.
- Differential Diagnostic Value of Percussion of Pathologic Aorta. N. G. Edelman and V. N. Panov.—p. 292.
- Nanthosis. D. A. Kogan.—p. 294.

**Ammonium Chloride Therapy of Edema.**—Kanfor found that edema which proved resistant to the usual therapy rapidly disappeared on administration of ammonium chloride (from 8 to 10 Gm. daily) in a number of cases of chronic nephritis or nephrosis. He obtained the same striking diuretic effect with disappearance of anasarca in circulatory failure due to cardiac insufficiency. This was accompanied by a fall in the blood pressure and a slowing of the pulse. In some of his cases the effectiveness of both digitalis and ammonium chloride was only temporary. In such cases he found that alternating the digitalis therapy with that of ammonium chloride became again an effective means of producing diuresis. He likewise had cases in which the administration of ammonium chloride actu-

ally aggravated the anasarca and the patient's condition. He feels that ammonium chloride therapy is advisable in those cardiac cases in which digitalis has been ineffective and that when the two have lost their effect they should be alternated. Because of its diuretic effect, ammonium chloride can be administered without preliminary digitalization. The author found that the diuresis provoked by ammonium chloride was regularly accompanied by an increase in the urinary excretion of chlorides. This was not noted with regard to the urea excretion. The determination of the carbon dioxide tension of the alveolar air and of the ammonia excretion in the urine enabled him to evaluate the acid-base balance and the degree of the developing acidosis. Since the acidosis resulting from the administration of ammonium chloride did not always produce diuresis but in some of the cases actually aggravated the condition, he concludes that acidosis is not the determining factor in the mechanism of diuresis caused by this drug. The fact that excretion of the chlorides in the urine was in excess of that administered in cases of increased diuresis suggests that dissociation of the ions of ammonium chloride leads to their combination with sodium ions and that the excretion of the latter from the organism initiates the mobilization of the retained tissue fluids.

**Functional Cardiac Murmurs.**—Bystritskiy divides functional murmurs into "muscular" murmurs, which are associated with some disturbance of myocardial function of contraction and tonicity, and "accidental" murmurs due to a variety of causes but not related to myocardial function. The muscular functional murmurs are heard best at the apex, while the accidental murmurs are heard best at the base of the heart at the mouth of the large vessels where they originate. The muscular is a delicate blowing murmur, which is heard better when the patient is lying down. It is characterized by its inconstancy and disappears or at least diminishes in intensity but is never intensified on exercise. The first heart tone may be weakened or in part be replaced by the murmur, but it does not disappear. The area of radiation is smaller than with organic murmurs. It never extends beyond the left parasternal line and is thus limited to the space between that line and the left border of the heart. The author investigated the state of myocardial function in 583 cases of functional murmurs heard at the apex and demonstrated the presence of disturbance of myocardial function in 82 per cent. In a group of cases in which the murmur was heard at the base, myocardial function was disturbed in only 12 per cent. The author points to the well known frequency of functional murmurs in pregnancy. Their mechanism was variously ascribed to the increase in the blood volume and the amplitude of the systole, the acceleration of the blood stream, the lifting of the diaphragm, and only exceptionally to toxic lesions of the myocardium. He found in his study of 230 pregnant women that the functional murmurs were almost always localized at the base. He concludes that these are accidental murmurs not related to the myocardium and that recognition of muscular functional murmurs is of diagnostic value because, besides the ruling out of an organic valvular lesion, it points to disturbance of myocardial function. The value of accidental murmurs to the cardiologist is questionable because of the multiplicity of conditions that can cause it.

### Ugeskrift for Læger, Copenhagen

98: 307-336 (April 9) 1936

- \*Tularemia—Disease of Lemmings. E. Sylvest.—p. 307.
- Comparative Iron Treatment of Anemias in Chronic Infectious Arthritis and Faber's Syndrome. A. Nyfeldt.—p. 310.
- Weil's Disease in Fyen: Dog as Carrier of Infection; New Case. E. Jacobsen.—p. 314.
- Epidemiologic Observations in Two Cases of Preparalytic Acute Anterior Poliomyelitis. J. Boas.—p. 316.
- Danger of Lead Poisoning in Use of Ethyl Gasoline. G. Lind.—p. 318.

**Tularemia—Disease of Lemmings.**—Sylvest says that the fact that lemmings (*Myodes lemmus*) in their migrations in great numbers at certain times are attacked by infectious disease and die and that simultaneous diseases occur in man has been known in Norway for centuries. Lemming fever was reported in 1532 by Jacob Ziegler, and Ole Woem's description (*Historia Animalis*, 1653) has now been verified as to both the clinical picture and the source of infection. Tularemia and the disease of lemmings are believed to be identical.



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## SOME OF THE PREVENTIVE ASPECTS OF THE MENTAL HEALTH PROBLEM

CHAIRMAN'S ADDRESS

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During the past two or three decades, as modern psychiatry has been developed in this country under the leadership of Dr. Adolf Meyer, there has gradually appeared a broader and broader realization of the importance of mental health. The differentiation of functional mental disorders from organic mental disorders, the improved facilities in medical schools for teaching psychiatry, the training of private practitioners and the establishment of clinics and institutions for carrying out the improved methods of diagnosis and treatment have all contributed to a wide stimulation of interest in the subject of mental health. Also, these developments have brought a better understanding of the whole problem and have indicated its immensity. For example it is said that the majority of the hospital beds in the United States are occupied by individuals who are there because of mental disorders. This is rather appalling, especially if we pause and recall how many there are of us who are still ambulatory.

With this huge problem before us and with the rather wide recognition of its importance it seems that the time is ripe to begin to direct more attention toward the preventive aspects of poor mental health than we have in the past. It is not meant by this that psychiatrists have not been actively concerned with prevention, but the incidence of mental disease is so great that they have been more or less swamped with mental problems already developed. In that they have attempted to prevent less serious problems from becoming more serious ones, of course they have practiced prevention in the broader sense. Even a further step in the direction of prevention has been made chiefly by the psychiatrists, and that is that mental hygiene and child guidance clinics have been established. However, the attendance at these clinics is made up almost entirely of children who already have well developed problem difficulties. My purpose then in this discussion is to emphasize the importance of beginning preventive work before mental problems develop, to try to point out how it can be done, and to indicate where the chief responsibility for its accomplishment lies.

But, before proceeding directly into the discussion of prevention, it might be well to recall that there has been a great deal of criticism by the medical profession

directed at certain trends in mental health work. Since almost every adult considers himself thoroughly capable of training children along ideal lines, and since the medical profession has to a large extent failed to assume the responsibility for giving information concerning this important procedure, quite naturally a number of individuals, even though inadequately trained, have entered this field. Some have gone in because of sentimental reasons. There are others who have been cheated out of the opportunity to train children and find in the child guidance clinic an opportunity for personal satisfaction and heavenly contentment. The foregoing is offered as an explanation for some of the critical remarks from the medical profession and is in no sense meant as a criticism of the well trained workers in this field whose accomplishments are commendable. We medical men like others have some tendency to criticize those who take over our responsibilities, even if we make little effort to assume them ourselves; but on our side we should not be blamed too severely for not taking over this work, since the medical schools have been at fault in not teaching us adequately concerning the various aspects of mental health work, especially the preventive aspects.

The realization that mental health is quite as important as physical health, that the two are undissociable and together concern the everyday activity of the whole human being, is gradually taking root. It is further being realized, since the two are equally important and undissociable, that the individual potentially best qualified to assume the responsibility for the health of this whole human being is the physician himself. If prevention is going to play the important rôle in mental health that it has in physical health, and there is no reason why it should not, we should begin practicing preventive measures as near the beginning as possible, since we have found that that early start is so effective in the prevention of poor physical health. It therefore follows that those who are going to be chiefly concerned with these activities are the pediatricians and other physicians who have the opportunity to supervise the care of the child from the beginning.

Let us return now to some of the practical aspects of prevention. If we begin by using the familiar term "health" instead of "hygiene," when thinking of mental functions, which places mental health on the same plane as physical health, and if we think of a human being in action in terms of behavior rather than in terms of mentality, I think we might be able to wean ourselves from much of the confusion that exists or has been created. If we eliminate the word "normal" and substitute the word "adequate," I think we shall be on much firmer foundation. And, if we will only recall that there are certain familiar common sense laws and principles which have guided human beings to and through an adequate existence ever since there have been human beings; that these simple basic laws have

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never changed and never will change; that we may group them under the head of religion, philosophy of life, common sense, or what you will, then shall we realize that any and all of us are capable of taking part in this work.

Going a step further, the task will be simpler if we recall that there is no fundamental difference mentally between human beings at any age. Infants differ from adults only in that adults through experience have learned to behave differently from children. In other words, child psychology is nothing more or less than human psychology. Psychology is that branch of science which concerns itself with the study of the mind or mental reactions. Mental reactions constitute our behavior. Behavior is the manner in which all of us spend our time, and all of us, regardless of age, spend all our time trying to get what we want (or that which produces comfort and pleasure), and trying to avoid what we do not want (or that which produces discomfort and displeasure).

Beginning then with the new-born infant, let us see if we cannot indicate briefly how adequate human beings are built. In the first place, the building material varies. In other words, no two infants start with the same hook-up, endowment or inheritance. We do not have to know immediately what the quality of this material is, since we are familiar with the plan of building. We must, however, recognize as nearly as possible as we go along whether we are getting the best out of our building material, and also that we are not trying to build a stronger mental structure than the material permits. The load must not be unbearable. The recognition then that the initial material out of which we try to build adequately functioning human beings varies tremendously in quality is about all we can do about inheritance.

With regard to environment, we first and continually consider our material and, as already outlined, build as well as we can with that particular material. To do this we must pay as careful attention to mental nutrition as we do to physical nutrition, for unless human beings are mentally well nourished we cannot expect them to develop into adequately behaving human beings. Mental nutrition is made up largely of the satisfaction of accomplishment commensurate with one's ability to accomplish. If we at any stage push any one too long beyond his ability to accomplish, disaster follows. Apply this to almost any phase of activity in life and it will readily be seen where the root of much of our trouble lies. On the contrary, if one accomplishes more or less commensurate with one's ability to accomplish, we usually see in that individual a stimulation to go ahead, sustained morale, self respect and at least much of the make-up of ambition.

Another human quality which is one of our main stays in respect to adequacy is courage. What are some of the elements which we commonly recognize as components of courage? Of course some human beings are born with more of this quality than others, but we may say simply that life is made up of a rough and a smooth side, a pleasant and an unpleasant side. We are apt to call any individual who faces the rough side with his chin out as well as who enjoys the smooth side a courageous individual. How then may we train the child to be courageous? From the very beginning it is important that he recognize that there is the unpleasant as well as the pleasant. His reaction to the unpleasant from the beginning is apt to be crying. This is natural, since it is his only mode of expressing displeasure or

discomfort. Infants soon learn to enjoy affection, sympathy and attention just as all human beings do, and if when he cries these are bestowed on him he quickly learns to use crying to get them. If, on the other hand, when he cries these are withheld and only necessary attention is given calmly, and one holds back affection, sympathy and undue attention until he is pleasant and behaving nicely, he soon learns that this is the way to get these things. He thus adopts thi<sup>s</sup> method of accomplishment which he has found successful and he becomes a pleasant, attractive individual. Parents through their sentimentality and self indulgence find it difficult to carry out these practices, but if persisted in they will succeed in preventing a child from being a whining, crying, pouting and tantrum-throwing individual. In other words, he soon learns to face his difficulties more or less pleasantly and is called a brave or courageous child. Remember that we adults cry after our fashion just as children do if we have not learned to face our difficulties with equanimity. The only difference is that our crying does not usually sound the same as that of a child. Instead, we swear, complain and offer alibis for our failures. In brief, we can train children from the beginning to face the rough side of life as well as enjoy the smooth side and thereby save many older children and adults from many of their neurotic tendencies, nervous breakdowns and suicidal tendencies.

Time and space do not permit me to discuss in detail many of the phases of behavior which go to make up everyday conduct. It might be well, however, merely to mention the matter of the amount of energy healthy children have, since it plays such a prominent part in our attitude toward them. Too often in our care of children we try to smother their normal, wholesome energy simply because its intensity worries us adults. The healthy energy of a child may be compared with the familiar electrical energy. We do not dare try to stop electrical energy but we may direct it along wholesome lines and accomplish remarkable things. This applies to the energy of children. It is not meant by this that we do not say "no" to children, for we can always say "no" reasonably, fairly and honestly to a child and demand obedience when he is doing that which is dangerous to himself or others, when he is destructive of valuable things, when he is interfering with the rights of others, and when he is making any unreasonable demands. If time permitted to elaborate it would be seen that these same "noes" reasonably apply to adults also, except that adults are supposed to have reached the age of discretion and may do things that are dangerous to themselves without interference.

Further, children should be treated always as if they were older than they are, one should have confidence in them, even though they may make mistakes or not always do things as we think they should, for it should be remembered that we ourselves blundered along and some one was kind enough to encourage us and permit us to live in spite of our mistakes and failures. Encouragement should be given for worth-while accomplishments even though they appear quite insignificant. Worth-while accomplishments are those that are good commensurate with the child's ability to perform. Children should be made responsible members of the family according to their ability to assume responsibilities, even though small, and should never be thought of merely as attachments to the family who are there to be told what to do and what not to do. If there is only one child in a family of three he should get the impression

that he is only a third of the family, and the smallest third, rather than seven eighths of it. This is difficult, but important for his sake.

One could go further and explain the basis for lying, stealing, reliability, dependability and how to make children mind, through all the elements that go to make up our everyday behavior, but the point of this discussion is to try to emphasize that the indications and methods for constructing mentally adequate older human beings out of infants and children are specific and definite. Knowing what to do in any given situation is not difficult, for it is just what an adult would consider the fair procedure for himself under fundamentally similar circumstances. All answers should be based on the age-old simple common sense laws that are conducive to adequate human conduct. But getting it done is often extremely difficult, for varying degrees of sentiment interfere and too frequently distort our views and warp our decisions.

Finally, there is great need and even a rapidly increasing demand from laymen for information concerning the preventive aspects of the mental health problem, and it is the responsibility of those of us physicians who care for children from the beginning to prepare ourselves to give it. Psychiatrists should help teach us and are certainly indispensable in helping us solve the more serious problems. Medical schools must emphasize prevention in their teaching as well as teach diagnosis and treatment of mental disease. The mental health problem in all of its aspects, then, is our combined responsibility and is not the property of any particular group.

### PROGNOSIS IN GALLBLADDER SURGERY

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Recognition of the deficiencies of gallbladder surgery from the point of view of complete relief of symptoms has troubled both surgeons and internists. It is generally agreed that, although the place of surgery in the treatment of a large group of patients with gallbladder disease is established, in another group the benefits of surgery are not so obvious. Many clinics have attempted to determine the criteria that place the individual patient in one or the other group. The method usually employed has been statistical in nature, consisting of analyses of clinical results as related to variations in history, physical examination and laboratory data.

Conclusions from current literature may be broadly generalized. Three criteria have received particular attention. Observers are in unanimous agreement that the patient with cholelithiasis has a better chance for relief of symptoms than the patient who has no stones. This contrast has been ascribed to the greater violence of symptoms in the former instance, either offering an opportunity for relatively greater relief of symptoms or affording a more accurate diagnosis. As a corollary it is felt that the more severe the symptoms the more probable the relief. The third contention is much less completely accepted and is the most widely discussed element in gallbladder surgery at present. The opinion

is apparently gaining ground that the nearer the time of operation to the onset of the acute attack, the better the prognosis for operative recovery and symptomatic cure.

The present paper consists of an analysis of 610 consecutive cases of cholecystitis and cholelithiasis studied along conventional lines. In addition an attempt has been made to assay the significance of results by the use of statistical formulas. The final aim in the analysis has been to throw light on criteria that may offer a prognosis in the individual case.

#### MATERIAL

The 610 cases of gallbladder disease were treated at the University of Virginia Hospital by operation at the hands of twenty surgeons during the years 1921 to 1934. Twenty-two of the patients died in the hospital, a mortality rate of 3.6 per cent as compared to a rate of 5.8 per cent in 512 cases reported from this hospital in 1921 by Goodwin.<sup>1</sup> Cases of carcinoma in or near the gallbladder are not included.

Written replies to a questionnaire or visits to the clinic afforded an estimate of final results in 447 cases (76 per cent) at intervals following treatment of from four months to thirteen years. The patients were questioned concerning (1) general health, (2) recurrence of symptoms, (3) food tolerance, (4) hernia, (5) capacity for work and (6) their estimate of the effects of treatment. These replies were first graded as follows:

**GRADE 1. Excellent Result.**—General health good; no recurrence of symptoms; no diet idiosyncrasy; no hernia or weakness of the operative wound; patient able to do ordinary work. The patients ascribe their freedom from symptoms to the operation.

**GRADE 2. Good Result.**—General health good; mild digestive symptoms or a few foods not well tolerated; no hernia; patient able to do ordinary work. The patients ascribe their great improvement to operation.

**GRADE 3. Fair Result.**—General health fair; bothersome digestive symptoms or occasional pain in the right upper quadrant; no hernia; patient usually able to do ordinary work. The patients believe themselves improved by operation. Many of the patients in this group are in fact but slightly discomforted by their symptoms and none are incapacitated.

**GRADE 4. Poor Result.**—General health poor, colic or frequent and marked indigestion; hernia; unable to do ordinary work. The patients consider themselves unimproved or made worse by operation. It must be noted that patients are placed in this group who present one of the unfavorable manifestations, although a few had several of them.

For simplification, the cases in groups 1 (excellent) and 2 (good), together with cases in which deaths were reported from other causes and in which there was no recurrence of gallbladder symptoms, are grouped together as "satisfactory results." The cases in groups 3 and 4, together with the deaths from any cause in which a recurrence of gallbladder symptoms had been reported, are grouped as "unsatisfactory results." This simple grouping definitely tends to minimize the value of surgery in gallbladder disease, since many patients in group 3 were well satisfied with the outcome of treatment. The really bad results are few in number. If one was to combine groups 1, 2 and 3 as "satisfactory results," a grouping for which there would be some justification, the percentage of satisfactory results would be 91.3 per cent as compared to 74.3 per cent in the present grouping.

<sup>1</sup> From the Department of Surgery and Gynecology and the University Hospital, University of Virginia School of Medicine, University, Va.

1. Goodwin, W. H.: The Surgery of the Gallbladder, with an Analysis of Five Hundred and Twelve Cases, South. M. J. 15:712 (Sept.) 1922.

## METHODS OF ANALYSIS

The data have been analyzed by the usual comparisons of percentages. Age, sex, race, duration and severity of symptoms, presence or absence of jaundice, presence or absence of a history of colic, presence or absence of gallstones, the degree of functional disturbance indicated by the cholecystogram, the pathologic stage of the disease (acute or chronic), and the type of operation have been studied with reference to the hospital mortality and the final symptomatic result. An additional factor studied has been the degree of pathologic change in the diseased gallbladder, an approach which has not previously been emphasized. The correlation between cholecystographic diagnosis and pathologic changes has also been studied.

The data have been subjected to statistical validation to define the significance of the results. The reason for such an attempt is obvious. Practical conclusions are commonly drawn from the percentage analysis of clinical material, based on samples so small or percentage differences so slight that the conclusions must be suspect. It has been deemed desirable not to add another such analysis without at least attempting to show whether the presented data have or have not statistical significance.

The method employed has been that involving the use of the "chi-square distribution."<sup>2</sup> This method furnishes an estimate of the significance of compared figures, taking into consideration the size of the samples from which they are derived. The mathematical end-point expressing such determinations of significance is a quantity designated *P*, which may be roughly described as indicating to what degree the element of pure chance has been influential in the results. Any data for which the calculated *P* is 0.01 or less may be considered significant. If *P* lies between 0.02 and 0.05, conclusions from data are probably significant. If greater than 0.05, the differences may be due to chance alone. The application of this method to the statistical studies here presented is indicated in the tables, in which both the value of *P* and the presence or absence of significance of the results are given. In the case of the statistical data referred to in the text alone and not presented in tabular form, the analysis revealed statistical validity in no instance.

The data are grouped under four heads: clinical, cholecystographic, pathologic and operative. They are presented without immediate reference to statistical evaluation, which is reserved for discussion later.

## CLINICAL DATA

*Age.*—Judd and Priestley<sup>3</sup> demonstrated better results in the older patients undergoing cholecystectomy and cholecystostomy. The present study revealed an apparent tendency toward better ultimate results with increasing age from 21 to 60 years.

*Sex.*—In the entire series there were 517 females and ninety-three males, a ratio of 5.5 to 1. The results were satisfactory in 71.2 per cent of the males and 74.8 per cent of the females.

*Race.*—An approximately equal percentage of satisfactory results are observed in the white and Negro races (74.4 per cent in the former and 72.2 per cent in the latter). The operative mortality rate in the white race (540 cases) was 4.1 per cent, while in the Negro race there was no death in seventy cases.

*Duration of Symptoms.*—Study of the duration of symptoms of gallbladder disease before operation presents nothing conclusive. There is no apparent trend toward better ultimate results from operation with a history of symptoms of longer duration. An exceptionally high operative mortality (9.6 per cent) in the group of patients who had had symptoms from one week to one month before operation was noted.

*Severity of Symptoms.*—The final results in patients having had mild symptoms preoperatively are only slightly less satisfactory than in those in whom the symptoms had been severe. This unexpected finding can be explained only on the basis of the personal equation, here doubly operative first through the original recorder of the history and secondly through the collator of the material. There is an expected difference in operative mortality (4.5 per cent in the cases presenting severe symptoms as against 0.6 per cent in those presenting mild symptoms).

*Jaundice and Colic.*—Study of the ultimate results with relation to the presence or absence of definite jaundice and colic offers no positive conclusion. The percentage of satisfactory results in those cases without a definite history of colic is actually slightly higher than in those with a history of colic. These results are definitely contradictory to the usual observations recorded.<sup>4</sup> They also present the same discrepancy that was found in studying the severity of symptoms. Probably the same explanation must be given.

## CHOLECYSTOGRAPHIC DATA

Numerous authors have compared the cholecystogram with the pathologic change found at operation. Brooks<sup>5</sup> concluded that "careful application of the method gives results on which the anatomical pathological change in the gallbladder may be estimated." Rose,<sup>6</sup> in a composite study of 6,268 cases reported by twenty authors, found that gallbladders diagnosed as abnormal by cholecystogram were pathologic in 93.3 per cent of cases. Case<sup>7</sup> stressed the point that cases of cholelithiasis examined by cholecystogram are almost certain to show either "no shadow" or "stone positive," or both, and found that both of these criteria were lacking in only 4.3 per cent of his cases. Ferguson and Palmer<sup>8</sup> found that cholecystographic diagnosis, when considered with clinical history, was pathologically correct in 90 per cent of cases.

In this series 252 cases were submitted to cholecystographic examination before operation. A comparison between the degree of functional disturbance as indicated by the x-rays and the symptomatic results reveals no marked differences in favor of the cases that presented marked x-ray evidence of gallbladder disease.

It might be noted in passing that, although the number of cases is small (fourteen), the ultimate results in cases of normal cholecystographic shadow are only 50 per cent satisfactory. This is of particular interest not only in the use of the normal cholecystogram as a warning against operation but also to point further the suggestion of Graham and Mackey<sup>9</sup> that a proportion of unsatisfactory results in gallbladder surgery arises from mistaken diagnosis.

4. Palmer, W. L.: Gallbladder Disease: Remarks on Symptoms, Diagnosis and Treatment, *Internat. Clin.* 1: 111 (March) 1935.

5. Brooks, Barney: Diagnosis and Treatment of Diseases of Gallbladder, *South. M. J.* 22: 233 (March) 1929.

6. Rose, Cassie B.: Some Problems and Results in Cholecystography, *Radiology* 22: 197 (Feb.) 1934.

7. Case, J. T.: Evaluation of Cholecystography, *J. A. M. A.* 92: 291 (Jan. 26) 1929.

8. Ferguson, A. N., and Palmer, W. L.: Cholecystography: Its Clinical Evaluation, *J. A. M. A.* 100: 809 (March 18) 1933.

9. Graham, E. A., and Mackey, W. A.: Consideration of Stoneless Gallbladder, *J. A. M. A.* 103: 1497 (Nov. 17) 1934.

2. Fisher, R. A.: Statistical Methods for Research Workers, Edinburgh, Oliver and Boyd, 1932.

3. Judd, E. S., and Priestley, J. T.: Ultimate Results from Operations on the Biliary Tract, *J. A. M. A.* 99: 837 (Sept. 10) 1932.

## PATHOLOGIC DATA

Although it may be acknowledged that the estimate of the actual degree of pathologic change in the gallbladder wall is conditioned by a large personal equation, it is worth while to attempt to correlate the clinical results with this variable. After all, the duration of symptoms, the severity of symptoms, the presence or absence of colic and jaundice, and the changes in the

TABLE 1—*The Presence or Absence of Cholelithiasis and Results\**

	Cases	Hospital Mortality	Follow Up	Symptomatic Results	
				Satisfactory	Unsatisfactory
Stone present	421	15 3.5%	308	243 79.0%	65 21.0%
Stone absent. . .	187	7 3.7%	139	89 64.0%	50 36.0%
Total	610	22	447	332	115

\* Statistical evaluation applied to operative mortality  $P = 0.91$  not significant. Statistical evaluation applied to symptomatic results  $P = 0.01$ —; significant.

cholecystographic shadow stem ultimately in most cases from anatomic alterations. This correlation has not often been emphasized. Weir and Snell<sup>10</sup> may be quoted as follows: "Permanent good results are obtained in from 80 to 95 per cent of cases in which stones are present, and in noncalculous disease of the gallbladder comparable results are obtained when the pathologic process is advanced" (italics ours).

The degree of pathologic change in the gallbladder wall has been classified as "mild," "moderate" or "marked." No definite limits between these grades can be specified. The mild degree of change represents slight fibrosis and minimal infiltration with inflammatory cells, a pathologic picture not far removed from the normal. The moderate degree represents definite thickening of the gallbladder wall and unmistakable infiltration, often associated with pericholecystic adhesions and enlargement of the cystic lymph gland. All other cases including most of the cases of acute cholecystitis are placed in the third group.

*Cholelithiasis Versus the Stoneless Gallbladder.*—Cases with and without cholelithiasis, including both the acute and the chronic cases, have been compared as to results (table 1). It is noted that the mortality rate is equal in the two groups but that there is considerable difference in the percentage of satisfactory results obtained in favor of the group presenting stones. This finding agrees with accepted opinion.

A comparison was made in cases of chronic cholecystitis alone between those with and those without stone. In the cases with stone the hospital mortality was only 0.8 per cent (228 cases) as contrasted with a mortality rate of 3.3 per cent (151 cases) in those without stone. These figures do not include cases presenting chronic cholecystitis and stone in the common duct, of which there were twenty-eight, with an operative mortality of 10.7 per cent. The significance of the difference between the first two mortality rates is not clear. It is possible that the cases of chronic cholecystitis without stone may represent those cases in which the diagnosis was wrong. The stoneless case is obviously less accurately diagnosed. The symptoms for

which operation was done in certain of the stoneless cases may have originated from coronary disease or some other condition unrelated to the disease of the gallbladder.<sup>9</sup>

*Degree of Pathologic Change.*—The comparison of symptomatic results as related to the degree of pathologic change and as related to the presence or absence of stone presents interesting data (table 2). In the stoneless group, the group with stone, and the combined group, the results are about 80 per cent satisfactory when a marked degree of pathologic change is found. It is suggested by these figures and by those presented in table 1 that about 80 per cent of satisfactory symptomatic results may be expected when either cholelithiasis or a marked degree of pathologic change is present.

Comparison between the radiographic measurement of gallbladder function and the degree of pathologic change reveals a close correlation when the total 252 cases submitted to cholecystography are considered (table 3C). As might be predicted, this correlation is also close in the cases complicated by stone (table 3A). On the other hand, in the stoneless group, although some tendency toward the same correlation is apparent (table 3B), it is not so close. These results

TABLE 2—*Degree of Pathologic Change and Results*

Degree of Pathologic Change		Cases	Hospital Mor tality	Follow Up	Symptomatic Results	
					Satis factory	Unsatis factory
A. With Stone*						
Mild	....	20	0	20	12 60 0%	8 40 0%
Moderate		278	6 2 1%	193	150 79 0%	40 21 0%
Marked		125	9 7 2%	98	81 82 7%	17 17 3%
Total		423	15	308	243	65
B. Without Stone†						
Mild	. . .	85	5 5 8%	66	37 56 0%	29 44 0%
Moderate		80	2 2 5 %	58	40 69 0%	18 31 0%
Marked		22	0	15	12 80 0%	3 20 0%
Total		187	7	139	89	50
C. With and Without Stone‡						
Mild	. . .	104	5 4 8%	86	49 57 0%	37 43 0%
Moderate		379	8 2 2%	248	190 76 6%	58 23 4%
Marked		147	9 6 1%	113	91 82 2%	20 17 8%
Total		610	22	447	332	115

\* Statistical evaluation applied to operative mortality  $P = 0.02$ , probably significant. Statistical evaluation applied to symptomatic results,  $P = 0.09$ , not significant.

† Statistical evaluation applied to operative mortality  $P = 0.1$ ; not significant. Statistical evaluation applied to symptomatic results,  $P = 0.12$ , not significant.

‡ Statistical evaluation applied to operative mortality,  $P = 0.17$ , not significant. Statistical evaluation applied to symptomatic results,  $P = 0.01$ —, significant.

agree with the generally accepted conclusions in regard to the value of the cholecystogram used as an index of functional integrity of the gallbladder.

*Acute Versus Chronic.*—We have compared the results following operation in cases presenting pathologically acute gallbladders with the results in those cases which were not acute. It is apparent that there

<sup>10</sup> Weir, J. F., and Snell, A. M. Symptoms That Persist After Cholecystectomy. J. A. M. A 105:1093 (Oct 5) 1935

is often some lack of clarity in the use of the word "acute." The pathologically acute gallbladder is not always the clinically acute gallbladder. Not infrequently after the subsidence of fever, leukocytosis, increased pulse rate, pain and tenderness, operation will reveal a gallbladder the condition of which is pathologically that of acute inflammation. If a decision is to be reached on the desirability of early surgery in acute cholecystitis, observers must come to some uniformity in the definition of acute cholecystitis. It must

TABLE 3—Cholecystogram and Pathologic Change

Degree of Pathologic Change	Normal Shadow	Good Shadow	Poor Shadow	No Shadow	
<b>A With Stone*</b>					
Mild	3	4	0	1	
Moderate	2	7	2	76	
Marked	0	0	10	30	
Total	5	11	3	107	158
<b>B Without Stone†</b>					
Mild	11	12	17	11	
Moderate	4	5	13	17	
Marked	0	0	2	2	
Total	15	17	32	30	94
<b>C With and Without Stone†</b>					
Mild	14	16	17	19	
Moderate	6	12	38	93	
Marked	0	0	12	32	
Total	20	28	67	137	252

\* P = 0.01—, significant

† P = 0.26, not significant

‡ P = 0.01—, significant

be specified as to whether the term is used to describe the clinical course or the pathologic picture. In the present instance we have confined the use of the word to the latter. The group of cases, therefore, classified as acute contains a proportion of cases in which acute symptoms have largely subsided. It must be remembered in this connection that what appears to be pus in the gallbladder has been said to be not necessarily a purulent exudate.<sup>11</sup>

This comparison between the acute cases, on the one hand, and the subacute and chronic, on the other hand, shows very slightly better results in the former group.

## OPERATIVE DATA

**Choice of Time for Operation in Acute Cases**—During the past twelve years there has been a gradual change of opinion with regard to the treatment of acute cholecystitis. Moynihan,<sup>12</sup> Lewis,<sup>13</sup> McGuire,<sup>14</sup> Deaver and Burden,<sup>15</sup> and Bruggeman<sup>16</sup> have earlier expressed themselves as in favor of nonoperative treatment of cholecystitis during the clinically acute stage, an exception being made when the patient under observation becomes definitely worse. As early as 1923, however, Walton<sup>17</sup> compared acute cholecystitis to acute appendicitis and advised immediate operation. This opinion was supported by the observation of Crile<sup>18</sup> showing a larger percentage of cures following cholecystectomy in the acute stage than in the chronic stage. Later

Mentzer,<sup>19</sup> Zinninger,<sup>20</sup> Graham,<sup>21</sup> Miller,<sup>22</sup> and Stone and Owings<sup>23</sup> expressed the opinion that early operative treatment is preferable to expectant treatment. Judd and Phillips,<sup>24</sup> as a result of a study of 508 cases of acute cholecystitis, concluded that early operation seems to be justified. Miller<sup>22</sup> found that the average length of time from the onset of acute symptoms to operation in fatal cases of acute cholecystitis was 15 days, and in those in which recovery occurred, 8.3 days.

In the present series the average interval between the onset of acute symptoms and operation was 11.1 days in fatal cases and 8.1 days in those in which recovery occurred. The operative mortality for the acute group was 4.7 per cent (seven cases). One patient died of peritonitis, three of pneumonia, one of empyema of the pleura, one of multiple liver abscesses and one of "circulatory collapse." Six instances of rupture of the gallbladder were found in 610 cases, operation being performed in one instance on the day of onset of acute symptoms. Other cases of rupture were discovered at

TABLE 4—Acute Cholecystitis: Time of Operation and Mortality

Time of Operation After Onset	Cases	Lived	Died
<b>A Our Studies*</b>			
Within 48 hours	11	11 100.0%	0
After 48 hours	138	131 95.0%	7 5.0%
Total	149	142	7
<b>B Graham's<sup>21</sup> Studies†</b>			
Within 48 hours	20	19 95.0%	1 5.0%
After 48 hours	178	167 93.8%	11 6.2%
Total	198	186	12
<b>C Zinninger's<sup>20</sup> Studies‡</b>			
Within 48 hours	12	12 100.0%	0
After 48 hours	23	20 86.9%	3 13.1%
Total	35	32	3
<b>D Total Studies (A, B and C)§</b>			
Within 48 hours	43	42 97.7%	1 2.3%
After 48 hours	359	318 93.8%	21 6.2%
Total	392	360	22

\* Statistical evaluation P = 0.47, not significant

† Statistical evaluation P = 0.54, not significant

‡ Statistical evaluation P = 0.19, not significant

§ Statistical evaluation P = 0.29, not significant

operation two, four, six, seven and eleven days after the onset. One patient with a ruptured gallbladder found at operation two days after onset of symptoms died of peritonitis.

In the group of cases pathologically acute, we have studied the mortality rate and the ultimate clinical

11 Andrews, Edmund. Pathologic Changes of Diseased Gallbladders. *A New Classification*. Arch. Surg. 31:767 (Nov.) 1935.12 Moynihan, Berkeley. Personal communication to Bruggeman.<sup>16</sup>13 Lewis, Dean. Personal communication to Bruggeman.<sup>16</sup>

14 McGuire, Stuart. Gallbladder Surgery, Virginia M. Monthly 50: 688 (Jan.) 1924.

15 Deaver, J. B., and Burden, V. G. Surgical Management of Complications of Cholecystitis, Ann. Surg. 84: 379 (Sept.) 1926.

16 Bruggeman, H. O. Treatment of Acute Cholecystitis. Ann. Surg. 87: 423 (March) 1928.

17 Walton, A. J. A Textbook of the Surgical Dyspepsia. London, E. Arnold, 1924, p. 512.

18 Crile, quoted by Bruggeman.<sup>16</sup>

19 Mentzer, S. H. Acute Gallbladder Manifesting Few Signs or Symptoms, Surg., Gynec. &amp; Obst. 55: 709 (Dec.) 1932.

20 Zinninger, M. M. Surgical Treatment of Acute Cholecystitis, Ann. Surg. 96: 406 (Sept.) 1932.

21 Graham, H. F. Value of Early Operation for Acute Cholecystitis, Ann. Surg. 92: 1152 (June) 1931.

22 Miller, R. H. Acute Cholecystitis, Ann. Surg. 92: 644 (Oct.) 1930.

23 Stone, H. B., and Owings, J. C. Acute Gallbladder as Surgical Emergency, Ann. Surg. 98: 770 (Oct.) 1933.

24 Judd, F. S., and Phillips, J. R. Acute Cholecytic Disease, Ann. Surg. 98: 771 (Oct. 7) 1933.



result with relation to the degree of clinical acuteness as measured by the time of operation following the onset of symptoms. If grouped by two-day intervals the number of cases in each group is too small to have significance and no regular variation in mortality is found with an increasing interval between onset of symptoms and operation.

If, however, we group the cases under the formula used by both Zininger<sup>20</sup> and Graham,<sup>21</sup> dividing the acute cases at the forty-eight hour period, the operative mortality is found to be zero in eleven cases in which operation was done within forty-eight hours after onset of symptoms as compared to an operative mortality of 5 per cent in 138 cases in which operation was done later (table 4A). This difference will be discussed later.

**Type of Operation.**—For the sake of completeness, the types of operation were compared in regard to the results. The best ultimate results were apparently obtained from combined cholecystectomy and choledochostomy. With the exception of three cases of choledochostomy alone, however, this group also carried the highest operative mortality (12.3 per cent of seventy-three cases). It is of interest to note that, of those patients who underwent choledochostomy with or without cholecystectomy, 8.7 per cent were reported by relatives as dead with a recurrence of symptoms, while of those undergoing simple cholecystectomy only 1.3 per cent of 518 patients had died with any recurrence of symptoms.

#### COMMENT

Since no statistically valid figures dealing with results are omitted from the accompanying tables, it will be seen that few of the data presented withstand the scrutiny of statistical evaluation. In spite of a fairly large number of cases, the great majority of comparisons recorded have no statistical significance. The application of this method with the same result to a number of tables published by other authors has cast doubt in our minds on much that has been accepted as proved on the basis of measured clinical results. Perhaps the value of the present contribution lies not only in the results themselves but also in pointing out what havoc may be wrought with percentage conclusions from clinical material when statistical validation of the data is attempted.

The only comparisons that statistical control shows to be significant between the criteria studied and the symptomatic results obtained are those dealing first with gallstones and secondly with the degree of pathologic change in the gallbladder wall. When gallstones are present, clinical results are 79 per cent satisfactory as compared to 64 per cent satisfactory when they are absent (table 1). When the pathologic change in the gallbladder wall is marked, the clinical results are 82.2 per cent satisfactory; when it is moderate, 76.6 per cent satisfactory, and when it is mild, only 57 per cent satisfactory (table 2C). These two results give weight to the conclusion rather generally expressed in present-day thought that the patient with a really diseased gallbladder has an excellent chance of a satisfactory symptomatic result if the gallbladder is removed.<sup>25</sup> The problem resolves itself into one of accurate diagnosis.

In this connection it is interesting that the correlation between the degree of pathologic change and the degree of deviation of the cholecystogram from the normal is statistically significant (table 3C). This finding offers

support to the general attitude of reliance on the cholecystogram as a diagnostic aid.

One of the correlations dealing with hospital mortality, although shown to have no statistical significance, deserves discussion. It has already been noted that in eleven cases of pathologically acute cholecystitis, in which operation was done within forty-eight hours after onset of symptoms, the mortality was 0 per cent, whereas in 138 patients operated on later the mortality was 5 per cent (table 4A). An obvious temptation is presented to draw conclusions that are shown by statistical evaluation to be not justified. In an attempt by increasing the size of the sample to bring corresponding comparisons within the realm of significance, we have subjected the combined figures of Graham,<sup>21</sup> Zininger<sup>20</sup> and our own to statistical inquiry (table 4). It is seen in this table that no one of the three series taken separately has statistical significance; nor has the summation of the three series, in spite of the fact that the mortality of cases in which operation was done more than forty-eight hours after onset of symptoms is almost three times that of cases in which operation was done earlier. In other words, it can be said that the desirability of early operation in acute cholecystitis has not been proved by these figures which base judgment on mortality rates.

#### SUMMARY

1. Analyses of a series of 610 consecutive cases of cholelithiasis and cholecystitis covering a period of thirteen years gives a hospital mortality rate of 3.6 per cent. The follow up of survivors includes 447 cases (76 per cent).

2. In addition to the usual percentage tabulation, the data are statistically controlled by the method of "chi-square distribution."

3. This method demonstrates in the present series no statistical significance in comparisons between the symptomatic results and such factors as age, sex, race, duration of symptoms, severity of symptoms, presence or absence of jaundice, presence or absence of a history of colic, the degree of functional disturbance indicated by the cholecystogram, the pathologic stage of the disease (acute or chronic) and the type of operation.

4. Following the application of statistical analysis to the data, these conclusions are justified:

(a) Cases of cholelithiasis present satisfactory clinical results in 79 per cent of cases; cases without stone, in 64 per cent.

(b) Cases that show a marked degree of pathologic alteration of the gallbladder wall present satisfactory clinical results in 82.2 per cent of cases; with a moderate degree of alteration, 76.6 per cent; with a mild degree, 57 per cent.

(c) The cholecystogram is a significant index of the degree of pathologic change in the gallbladder.

(d) The desirability of early operation in acute cholecystitis is not proved when measured by mortality rates.

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**The Calcium Requirement.**—The amount of calcium needed in the normal maintenance nutrition of the human adult has been carefully investigated by means of large numbers of calcium-balance experiments made with healthy men and women. In the average of about 100 such experiments, it has been found that the body requires for mere maintenance, that is, in order that it shall not persistently lose calcium from its own tissues, 0.45 gram of calcium per day per 154 pounds of body weight.—Sherman, H. C.: *Food and Health*, New York, Macmillan Company, 1934.

25. Andrews, Edmund: Must We Revise Our Indications for Cholecystectomy? *Internat. Clin.* 3: 172 (Sept.) 1935.

## A STUDY OF DIABETES MELLITUS AMONG EX-SERVICE MEN

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A study of diabetes mellitus similar to the present one was made in 1931 and included a clinical, laboratory and dietetic survey of a group of 300 diabetic veterans for the purpose of ascertaining whether the conditions found in the veteran population were comparable with those seen in civil life. The study showed that 13 per cent of the group first gave evidence of the diabetic disease during the period of military service at an average age of 32 years and that 87 per cent gave a history of the onset of the disease after discharge from the military service, at an average age of 37 years.

In the study referred to an effort was made to learn whether or not the traumas of warfare and certain neurogenic factors observed in the military service were in any way related to the inception of the diabetic condition. In addition, an inquiry was made to ascertain whether or not postwar social and economic hardships and maladaptations were in any way conducive to the diabetic state. The evidence in favor of the conditions enumerated as etiologic factors were not convincing. The inception of the disease could be better explained on the basis of constitutional predisposition, obesity, faulty metabolism, concomitant internal secretory disturbances and certain other individual factors.

### CLASSIFICATION

The present study includes 1,663 living diabetic veterans. These patients were grouped according to the classification of the diabetic condition as suggested by Joslin. The diagnostic data in each case were carefully reviewed and the patient was placed in a particular group only after he had met all the criteria required for that particular classification.

Table 1 shows that, of the total number of diabetic veterans, true diabetes mellitus was found in 88.6 per cent, potential diabetes in 8.9 per cent, unclassified diabetes mellitus in 1.7 per cent and renal glycosuria in 0.8 per cent.

In comparing these data with similar data of Joslin,<sup>1</sup> it is noted that the incidence of potential diabetes mellitus in Joslin's group is very much smaller than in the present study. The explanation is that the veterans are a younger group of men of an average age of 43 years. It is probable that many of the cases of potential diabetes mellitus will eventually be reclassified and found to be cases of true diabetes mellitus.

It is of interest to note that twenty-eight, or 1.7 per cent, of the group were found to have unclassified diabetes mellitus. This compares with 10 per cent of Joslin's group of 13,000 cases. It is possible that, as the veterans grow older and are subject to various diseases commonly associated with this type of diabetes, the incidence of unclassified diabetes mellitus will increase. In addition it was found that sixty-one cases of the total group gave evidence of some coexisting abnormality of one or more of the internal secretory

glands; however, it was decided that, in spite of this fact, the diabetic condition met the criteria established for true diabetes mellitus.

It is noted that the incidence of renal glycosuria in the present study is 0.8 per cent, as compared with 0.3 per cent in Joslin's group. Although the criteria of Joslin were applied in the present instance, it is nevertheless possible that, on further observation and study, certain of the patients will eventually be found to present evidence of potential or true diabetes mellitus.

### HEREDITARY AND FAMILIAL HISTORY

Baur, Fischer and Lenz<sup>2</sup> state that a simple dominant heredity is not the rule in diabetes mellitus. These observers hold that the reason for the difficulty in tracing the inheritance of diabetes mellitus through several generations is the inability or difficulty to recognize the disease, and also that many persons with potential diabetes die from other causes before true diabetes mellitus becomes manifest. It is the opinion of Baur, Fischer and Lenz that in most cases diabetes mellitus is the result of a recessive hereditary factor. Furthermore, the disease may skip one or more generations, and the genealogies in the literature generally support this view. Joslin<sup>3</sup> found that the disease goes down through the males rather than the females. The reason given is that every other pregnancy in a diabetic woman

TABLE 1.—Classification of Group of 1,663 Diabetic Veterans

	Number	Per Cent
True diabetes mellitus	1,473	88.6
Potential	149	8.9
Unclassified	28	1.7
Renal glycosuria	13	0.8
Totals	1,663	100.0

results in a stillborn infant. Pincus and White<sup>4</sup> hold that the incidence of diabetes is higher in families of diabetic patients than in families of nondiabetic persons.

Priscilla White<sup>5</sup> is of the opinion that diabetes mellitus is transmitted as a simple mendelian recessive. Pincus and White<sup>6</sup> hold that diabetes mellitus, because of the fact that it is frequently not immediately identifiable and is manifested in different individuals at different ages, is not as easily proved to be an inherited disease, although they found ratios consistent with simple mendelian recessiveness.<sup>1</sup>

White, Joslin and Pincus<sup>7</sup> found that the difference between the occurrence of diabetes in a diabetic and a control population was that 2 per cent of the parents of the control population had diabetes mellitus whereas 8 per cent of the parents of the diabetic patients had the disease. Diabetes occurred ten times more frequently in brothers and sisters of diabetic patients than in the control group.

In this connection it is important to bear in mind the fact that other factors than heredity play a part in the inception of the disease. Some of these factors are abnormal endocrine activity, obesity and infections.

2. Baur, Erwin; Fischer, Eugen, and Lenz, Fritz: Human Heredity, New York, Macmillan Company, 1931, pp. 353-355.

3. Joslin, E. P.: Diabetic Children, South. M. J. 26:1-6 (Jan.) 1933.

4. Pincus, Gregory, and White, Priscilla: On the Inheritance of Diabetes Mellitus: I. An Analysis of 675 Family Histories, Am. J. M. Sc. 186:1-14 (July) 1933.

5. White, Priscilla: The Heredity of Diabetes, Commonwealth, Massachusetts Department of Public Health 21:109 (April-May-June) 1934.

6. Pincus, Gregory, and White, Priscilla: On the Inheritance of Diabetes Mellitus: II. Further Analysis of Family Histories, Am. J. M. Sc. 188:159-168 (Aug.) 1934.

7. White, Priscilla; Joslin, E. P., and Pincus, Gregory: The Inheritance of Diabetes, J. A. M. A. 103:105-106 (July 14) 1934.

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Dr. Elliott P. Joslin of Boston and Dr. Louis I. Dublin of New York offered valuable suggestions in this work. Cooperation was given by the medical officers of the various Veterans' Administration Facilities.  
A. Bamberg, assistant statistician, and O. M. Allen of the Research Subdivision, Medical and Hospital Service, assisted in the statistical work of this study.

1. Joslin, E. P.: The Treatment of Diabetes Mellitus, ed. 5, Philadelphia, Lea & Febiger, 1935.

In a previous study I<sup>8</sup> found that 10.6 per cent of a group of 300 diabetic veterans gave evidence of a hereditary or familial history of the disease. Of this group of 1,663 veterans 145, or 8.7 per cent, gave a hereditary, familial or combined hereditary and familial history of diabetes mellitus. Of this number seventy-two gave a hereditary history, fifty-four gave a familial history and nineteen gave a combined familial and hereditary history of the disease.

Of the seventy-two veterans with a hereditary history, sixty-four gave evidence of true diabetes mellitus and eight of potential diabetes mellitus. The largest groups, thirty-one and thirty-three, showed the presence of the disease in the father and mother respectively.

Of the fifty-four veterans with a familial history of the disease, fifty were patients with true diabetes mellitus, two had potential diabetes mellitus, one had unclassified diabetes mellitus, and one had renal glycosuria. The largest groups, eighteen and thirty-three, showed the presence of the disease in the sister and brother respectively.

Of the nineteen veterans with a combined hereditary and familial history, seventeen had true diabetes mellitus and two had potential diabetes mellitus. The largest groups, four, three and two, showed the presence of the disease in father and brother, mother and brother, and mother and sister respectively.

#### AGE AT ONSET

In a previous study I<sup>8</sup> found that 25.3 per cent of a group of diabetic veterans gave evidence of the onset of the disease within the age group 30-35, 19 per cent within the age group 35-40 and 18 per cent within the age group 25-30. Seventy and nine-tenths per cent of the group gave evidence of the diabetic condition prior to age 40, while 29.1 per cent showed the presence of the disease after that age. In this connection it is desired to point out that the largest number of these diabetic veterans were World War veterans whose average age at the time of diagnosis was 33.7 years.

Pincus, Joslin and White<sup>9</sup> state that a true picture of the susceptibility to diabetes at various ages is given by the ratio of the number of persons developing the disease to the number exposed to the disease in those ages. In their study of the rate of onset of diabetes by age groups, these observers found that the maximum susceptibility to the development of the diabetic disease occurred in the sixth decade. More detailed figures showed that age 51 among males was the age of maximum susceptibility. The onset rates further indicated that there is a declining susceptibility to diabetes in the later decades.

Joslin<sup>1</sup> states that, in the past, discussions and statistics on the incidence of diabetes were wrong, because they were based on the dead instead of on the living. This observer in a study of the age at onset of 4,639 diabetic patients, treated between 1898 and 1933 found that the maximum susceptibility to the development of the disease in males occurred in the sixth decade; 24.19 per cent of the males gave evidence of the onset of the disease in this decade. The susceptibility to the development of diabetes rose steadily to this maximum and thereafter declined.

According to Joslin the most significant aspect of the onset rates is the declining susceptibility to diabetes

in the later decades, thus indicating that the disease is not characteristic of old age and is therefore not a manifestation of senility. It is his opinion that the onset of diabetes depends on a complex of events of endocrine origin which attain fruition between the ages of 40 and 60 years.

In a study of the age at onset of diabetes, Joslin showed that the acme of the onset of the disease comes in the five year period 50 to 54 years, during which period 14.4 per cent of the males give evidence of the disease. The onset rate was 10.3 per cent in the 40 to 44 year period, 12.7 per cent in the 45 to 49 year

TABLE 2.—Classification of 145 Cases of Diabetes Mellitus with a Hereditary, a Familial or a Combined Hereditary and Familial History of the Disease by Type of Diabetes Mellitus and Member of Family Affected

	Diabetes Mellitus				
	Total	True	Poten- tial	Un- classi- fied	Renal Glyco- suria
<b>Hereditary history:</b>					
Father.....	31	28	3	..	..
Mother.....	33	28	5	..	..
Aunt.....	1	1	..	..	..
Uncle.....	1	1	..	..	..
Father and mother.....	2	2	..	..	..
Grandfather.....	3	3	..	..	..
Father and uncle.....	1	1	..	..	..
Total cases giving a hereditary history.....	72	64	8	0	0
<b>Familial history:</b>					
Sister.....	18	17	1	..	..
Brother.....	33	30	1	1	1
Cousin.....	1	1	..	..	..
3 brothers and 1 sister.....	1	1	..	..	..
Brother and sister.....	1	1	..	..	..
Total cases giving a familial history..	54	50	2	1	1
<b>Hereditary and familial history:</b>					
Mother and brother.....	3	3	..	..	..
Mother and sister.....	2	2	..	..	..
Mother, brother and sister.....	1	1	..	..	..
Mother, 2 brothers and sister.....	1	1	..	..	..
Mother, father and brother.....	1	1	..	..	..
Father and brother.....	4	4	..	..	..
Father and sister.....	1	1	..	..	..
Mother, father and sister.....	1	1	..	..	..
Father, brother, uncle, aunt and cousin	1	..	1	..	..
Grandfather, aunt and cousin.....	1	1	..	..	..
Brother, uncle and 2 cousins.....	1	1	..	..	..
Uncle and sister.....	1	1	..	..	..
Uncle and cousin.....	1	..	1	..	..
Total cases giving a hereditary and familial history.....	19	17	2	0	0
Grand totals.....	145	131	12	1	1

period and 10.7 per cent in the 55 to 59 year period. The median age at onset for all the males was 46.5 years.

In this connection it might be stated that there is a difference between the onset rate of diabetes mellitus and the mortality rate of the disease. The onset rates indicate that after the age of 60 is reached the chance of developing diabetes mellitus decreases, while the mortality rates indicate that the older one grows the greater are the chances of dying from diabetes.

According to Joslin, the statistics point to two cardinal ideas: that (1) emphasis should be placed on the prevention of the onset of diabetes in middle life and (2) the chief concern in the treatment of the disease should be with its late complications, because at present few diabetic patients die when young or of diabetes per se.

Table 3 gives a classification of 1,663 diabetic veterans according to the type of the disease as well as the age at the time of onset of the diabetic condition.

8. Matz, P. B.: A Study of Diabetes Mellitus Among Ex-Service Men, Mil. Surgeon 68: 591 (May) 1931.

9. Pincus, Gregory; Joslin, E. P. and White, Priscilla: The Age Incidence Relations in Diabetes Mellitus, Am. J. M. Sc. 188: 6-12 (July) 1934.

In this connection it is important to remember that the average age of the entire veterans group (approximately 4,409,247) was 44 years at the time of this study, and, furthermore, 93 per cent of this number, or approximately 4,193,373, were World War veterans of an average age of 43 years.

A study of the data in table 3 indicates that the largest number, 850, or 51 per cent of the group of 1,663 diabetic veterans, gave evidence of the onset of the disease within the age group 30 to 39. It is further noted that 80 per cent gave evidence of the disease before the age of 40 and 20 per cent after the age of 40. The average age of the group of 1,663 veterans at the time of the onset of the diabetic condition was 33.7 years.

The data in table 3 are not in accord with the data of Joslin; the latter found that the acme of the onset of the disease comes in the five year period 50 to 54 years. In the ex-service group the acme of the onset of the disease appeared to be within the age group 30 to 34. The reason for the difference appears to be that we are dealing with a select group of young males, whose average age is approximately 44 years.

TABLE 3.—Age at Time of Onset

Age, Years	Total		True Diabetes Mellitus		Potential Diabetes Mellitus		Unclassified Diabetes Mellitus		Renal Glycosuria	
	Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent
Up to 14	1	0.1	1	0.1	..	....	..	....	..	....
15-19	16	1.0	13	0.9	..	....	1	3.6	2	15.4
20-24	162	9.7	149	10.1	7	4.7	3	10.6	3	23.0
25-29	297	17.9	275	18.7	17	11.4	4	14.3	1	7.7
30-34	430	25.8	385	26.1	36	24.1	7	25.0	2	15.4
35-39	420	25.2	356	24.1	53	35.6	7	25.0	4	30.8
40-44	240	14.4	212	14.4	24	16.1	4	14.3	..	....
45-49	53	3.5	50	3.4	7	4.7	1	3.6	..	....
50-54	21	1.3	17	1.1	3	2.0	..	....	1	7.7
55-59	10	0.6	9	0.6	1	0.7	..	....	..	....
60-64	5	0.3	4	0.3	1	0.7	..	....	..	....
65-69	2	0.1	1	0.1	..	....	1	3.6	..	....
70-74	1	0.1	1	0.1	..	....	..	....	..	....
Totals	1,663	100.0	1,473	100.0	149	100.0	23	100.0	13	100.0
Av. age	33.7		33.5		35.4		35.8		30.5	

These data indicate that true diabetes mellitus as well as the other diabetic conditions may develop in the younger age groups and at a greater rate than is commonly supposed. It is safe to state that diabetes mellitus is a disease of youth as well as middle age. Furthermore, if the diabetic condition continues to appear in the higher age groups and at a higher rate of onset we may expect to see a larger number of diabetic veterans in the years to come, thus increasing the problem of the treatment of diabetic ex-service men in the Veterans' Administration.

#### DURATION OF LIFE

The prognosis and the duration of life in diabetes mellitus depend on a number of factors: first, the type of the disease, whether it is mild or severe; second, whether or not insulin is being administered; third, on the general physical condition of the patient aside from the diabetes; fourth, on whether or not complications or coexisting diseases are present; and, lastly, on whether or not the diabetic patient cooperates fully with his physician and undergoes the regimen according to the requirements in his case.

Joslin<sup>1</sup> states that in the Naunyn era (before 1914) the average duration of life subsequent to the onset of diabetes was 4.8 years. In the Allen period (1914-1922) the average duration had increased to six years.

In the early Banting period (1922-1925) the average duration was 7.6 years. In the middle Banting period (1926-1929) it had increased to 8.4 years. In the later Banting period from Jan. 1, 1930, to the present, the average duration had increased to eleven years.

Of the 1,252 living diabetic veterans who are being treated with insulin, 1,243 have a diagnosis of true diabetes mellitus and nine unclassified diabetes mellitus. Of this group 318, or 25.4 per cent, have survived the disease from six months to five years; 394, or 31.5 per cent, from five to ten years; 279, or 22.3 per cent, from ten to fifteen years, and 261, or 20.8 per cent, from fifteen to over eighteen years. Accordingly 43.1 per cent of the group of diabetic patients treated with insulin have survived the disease ten years or longer.

The longest duration of the group of 1,243 cases of true diabetes mellitus was forty-two years, the shortest eight months, and the average duration to the date of this study 9.1 years.

Of the nine living patients with unclassified diabetes mellitus the longest duration was sixteen years, the shortest duration was 3.6 years, and the average duration to the date of this study was 12.8 years.

Four hundred and eleven of the living diabetic patients are not receiving insulin as a routine treatment, 230 have true diabetes mellitus, 149 potential diabetes mellitus, nineteen unclassified diabetes mellitus and thirteen renal glycosuria.

Of the 411 diabetic or renal glycosuric patients 188, or 45.7 per cent, have lived from less than six months to five years; 119, or 29 per cent, have lived from five to ten years; forty-four, or 10.7 per cent, have lived from ten to fifteen years, and sixty, or 14.6 per cent, have lived from fifteen to over seventeen years. It is thus seen that 25.3 per cent of the group of diabetic patients not treated with insulin have survived the disease ten years or longer.

Of the 230 patients with true diabetes mellitus who were not treated by insulin, the longest duration up to the date of this study has been twenty-eight years, the shortest eleven months, and the average duration 7.2 years.

In the group of 149 patients classified as having potential diabetes mellitus the longest duration has been 16.7 years, the shortest duration four months and the average duration 6.7 years.

Among the nineteen patients with a diagnosis of unclassified diabetes mellitus the longest duration has been fifteen years, the shortest duration 1.5 years and the average duration 7.4 years.

Of the thirteen with renal glycosuria the longest duration has been twenty-one years, the shortest duration 3.8 years and the average duration 12.5 years.

#### INSULIN

In the management of true and unclassified diabetes mellitus it is essential that the treatment be individualized. If possible the patient should first be treated by a diet and an effort should be made to have the urine sugar free and the blood sugar reduced to a normal percentage. If an endocrine abnormality or gallbladder disease is a factor in the causation of the diabetic condition, an effort should be made to overcome or remove the cause. If, after a serious effort is made to reduce the hyperglycemia and to remove the sugar from the urine by diet and other measures, the desired results are not attained, steps should be taken to ascertain the number of units of insulin required to overcome the

diabetic condition and the patient should be placed on a combined dietetic and insulin regimen.

Joslin<sup>1</sup> states that diabetes is never complete. This complicates the problem of the therapeutics with insulin, because one never knows how much insulin the active pancreatic remnant yields and therefore how much insulin must be supplied to the diabetic patient.

In a previous study I<sup>8</sup> found that 240, or 80 per cent, of a group of 300 diabetic patients had received insulin during the course of treatment. Table 4 indi-

TABLE 4.—Number of Patients Receiving Insulin; Also Number Treated Without Insulin

	Total	Number of Patients Receiving Insulin		Number of Patients Not Receiving Insulin	
		Num-ber	Per Cent	Num-ber	Per Cent
True diabetes mellitus.....	1,473	1,243	84.4	230	15.6
Potential diabetes mellitus.....	149	.....	.....	149	100.0
Unclassified diabetes mellitus.....	28	9	32.1	19	67.9
Renal glycosuria.....	13	.....	.....	13	100.0
Total cases.....	1,663				

cates that of 1,473 cases of true diabetes mellitus 1,243, or 84.4 per cent, had been treated by insulin and 230, or 15.6 per cent, had not received insulin. Furthermore, of twenty-eight patients with unclassified diabetes mellitus nine, or 32.1 per cent, had been treated by insulin and nineteen, or 67.9 per cent, had not received insulin.

In considering the question of whether a diabetic patient should or should not receive insulin the physician is confronted with a number of problems. In the first place it is important to know whether the disease is mild or severe, whether a dietetic regimen alone will control the hyperglycemia and glycosuria, and lastly whether the case is one of true or unclassified diabetes; if the latter, an effort should be made to eliminate or overcome the particular condition that may be the cause of the reduced carbohydrate tolerance.

It is believed that good medical practice dictates that insulin should not be administered until after other means such as diet, the correction of abnormal endocrine disturbance and the reduction of weight are first resorted to. When these measures fail, the physician may administer insulin to compensate for the reduced pancreatic activity.

#### RESULT OF TREATMENT

The result of the treatment of diabetes depends on the type of diabetic disease and its severity; also on the professional ability and judgment of the physician and the intelligence and cooperation of the diabetic patient. The physician who treats diabetes mellitus should be familiar with the nature of the various types of diabetic conditions, with the complications of true diabetes mellitus and with their proper management.

Numerous dietetic and therapeutic regimens have been recommended for the treatment of the disease. The adherents and proponents of each regimen are able to show good results with the particular treatment used. Accordingly, it is difficult for an impartial observer to decide which of the several regimens is the best for the patient.

It would appear that the ideal form of treatment is one that individualizes the diabetic patient and in which an effort is made to diminish the existing physiologic burden by reducing the intake of the protein, fat and

carbohydrate foodstuffs until the urine becomes sugar free and the blood sugar is within normal range. If glycosuria and hyperglycemia cannot be eliminated by a modification of the diet, it becomes necessary to administer insulin for that purpose as well as to assist the patient with the assimilation and oxidation of the requisite amount of foodstuffs to yield sufficient energy and maintain body weight.

It is essential for the physician who treats diabetes mellitus to teach the patient all he should know about the disease and its management. In other words, the treatment of the diabetic patient should include instruction in the fundamental concepts of the disease and its management.

As the diabetic patient dies usually from complications of the disease, it should be the aim of the physician to prevent complications, and if perchance any should appear, the patient should receive immediate appropriate treatment. Another objective of the treatment is to increase the patient's tolerance for carbohydrates.

In a previous study<sup>8</sup> in which an effort was made to ascertain the result of the treatment of a small group of cases of true diabetes mellitus without insulin, it was found that of a total of forty-four cases eighteen, or 40 per cent, of the number gave evidence of satisfactory control of the diabetic condition; in nineteen, or 43 per cent, the diabetic condition was partially controlled; five, or 11 per cent, were uncontrolled, and two patients, or 5 per cent, died following treatment.

In the study it was also ascertained that of 237 cases of true diabetes mellitus treated by insulin forty, or 17 per cent of the group, gave evidence of satisfactory control of the diabetic condition; in 156, or 66 per cent, the diabetic condition was partially controlled; twenty-nine, or 12 per cent, were uncontrolled; and twelve patients, or 5 per cent, died following treatment.

Table 5 indicates that of 230 cases of true diabetes mellitus that were not treated by insulin 146, or 63.6 per cent, gave evidence of satisfactory control; fifty-nine, or 25.7 per cent, were partially controlled, and twenty-five, or 10.7 per cent, were uncontrolled. Of 149 cases of potential diabetes mellitus 123, or 82.6 per cent, were controlled, and twenty-six, or 17.4 per cent, were partially controlled, and twenty-six, or 17.4 per cent, were uncontrolled.

TABLE 5.—Result of Treatment of 411 Diabetic Cases Without Insulin, by Clinical Classification of the Diabetic Condition

	Total Cases	Controlled		Partially Controlled		Uncontrolled	
		Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent
True diabetes mellitus.....	230	146	63.6	59	25.7	25	10.7
Potential diabetes mellitus.....	149	123	82.6	26	17.4	..	..
Unclassified diabetes mellitus.....	28	16	57.1	9	32.1	3	10.7
Renal glycosuria.....	13	12	92.3	1	7.7	..	..
Totals.....	411		72.3		21.6		6.1

cent, were partially controlled. Of nineteen cases of unclassified diabetes mellitus the diabetic condition was controlled in sixteen, or 84.2 per cent, and the condition was partially controlled in three, or 15.8 per cent. Of thirteen cases of renal glycosuria twelve, or 92.3 per cent, were controlled and one, or 7.7 per cent, was partially controlled. Taking the whole group of 411 cases not treated by insulin, 297, or 72.3 per cent, were controlled; eighty-nine, or 21.6 per cent, were partially controlled, and twenty-five, or 6.1 per cent, were uncontrolled.

Table 6 indicates that of the group of 1,243 cases of true diabetes mellitus treated by insulin the diabetic condition was controlled in 382, or 30.7 per cent, the condition was partially controlled in 582, or 46.8 per cent, and the condition was not controlled in 279, or 22.5 per cent.

Of the nine cases of unclassified diabetes mellitus six, or 66.7 per cent, were controlled; two, or 22.2 per cent, were partially controlled, and one, or 11.1 per cent, was uncontrolled.

A careful study of the data in tables 5 and 6 indicates that insulin was used to a larger extent in the treatment of true and unclassified diabetes mellitus than

TABLE 6.—*Result of Treatment of 1243 Diabetic Cases with Insulin by Clinical Classification of the Diabetic Condition*

	Total Cases	Controlled		Partially Controlled		Uncon- trolled	
		Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
True diabetes mellitus.....	1,243	382	30.7	582	46.8	279	22.5
Unclassified diabetes mellitus...	9	6	66.7	2	22.2	1	11.1

were dietetic and other regimens. It was also noted that a much larger percentage of the cases of true diabetes mellitus had the disease controlled by diet alone than by the use of insulin. The reason is that the cases treated by diet were of a milder type than those treated by insulin. This is further supported by the fact that larger percentages of insulin-treated cases showed partial control, and complete uncontrol of the diabetic condition. It means that the condition of the diabetic patients treated with insulin was at times such as not to respond favorably to this therapeutic agent. The data further indicate that unclassified diabetes mellitus treated by insulin showed better results than cases of true diabetes mellitus similarly treated.

#### COMPLICATIONS AND COEXISTING DISEASES

The complications and coexisting diseases most frequently found in diabetes mellitus are diabetic coma, the various infections, cardiovascular renal disease and pulmonary tuberculosis.

The complications, sequelae and intercurrent diseases are of more serious import to the diabetic patient than is diabetes itself. It is the presence of one or more of the complicating or intercurrent diseases that makes the prognosis of the diabetic condition less favorable and interferes with the satisfactory treatment of the disease. Death of the diabetic patient is usually due to one of the complications or intercurrent infections rather than to diabetes mellitus itself.

In a previous study I<sup>8</sup> found that among a group of 300 diabetic patients 79 per cent gave evidence of one or more complicating or coexisting diseases. The most frequent coexisting diseases in the group studied were obesity, coma, arteriosclerosis, tonsillitis, caries of teeth, hypertension and tuberculosis. Joslin<sup>1</sup> refers to a group of 1,206 diabetic patients and thirty-seven patients with nondiabetic glycosuria who were admitted to the George F. Baker Clinic in 1934, 257 of whom had no complicating disease and the others giving evidence of one or more complications.

Table 7 indicates that among 1,663 diabetic patients included in the present study 1,770 coexisting or complicating diseases were noted, an average of 1.1 disabilities per patient. Among twenty-eight cases of

unclassified diabetes mellitus of the group, forty-six coexisting conditions were noted, or an average of 1.6 disabilities per patient.

The most frequent coexisting conditions found among the group of diabetic patients were cardiac disease, arteriosclerosis, hypertension, chronic tonsillitis, arthritis, chronic bronchitis, psychoneurosis, obesity, active and inactive pulmonary tuberculosis, and diseases of the kidneys.

The most frequent coexisting conditions are those referable to the vascular system; 365, or 21.9 per cent of the group, gave evidence of this type of complication. Arteriosclerosis and hypertension were present to the extent of 7.1 per cent and 7 per cent respectively. Heart disease was a complicating factor to the extent of 15.6 per cent. Certain of the other coexisting diseases such as arthritis, bronchitis and tonsillitis were in no way related to diabetes mellitus.

Diseases of the endocrine glands were found to the extent of 3.2 per cent. The most frequent gland affected was the thyroid. In a number of instances there was a pluriglandular involvement.

Obesity was present to the extent of 4.4 per cent and was in some way related to the diabetic condition.

Psychoneurosis was noted in 129, or 7.8 per cent, of the cases. A careful study of these cases revealed the fact that in sixty-five instances the psychoneurosis followed the inception of diabetes mellitus. It may be assumed therefore that the diabetic disease was a direct or contributing cause of the psychoneurosis. In twenty instances the development of the psychoneurosis preceded the inception of the diabetic condition. Accord-

TABLE 7.—*Principal Coexisting and Complicating Diseases*

	Total		True Dia-betes	Poten-tial Dia-betes	Unclassified Dia-betes	Renal Glyco-suria
	Num-ber	Per Cent				
.....	8	0.5	8	..	..	..
.....	7	0.4	6	1	..	..
.....	156	9.4	136	15	4	1
.....	144	8.7	124	17	1	2
.....	22	1.3	22	..	..	..
.....	95	5.9	86	9	3	..
.....	3	0.2	3	..	..	..
.....	54	3.2	40	5	9	..
.....	239	15.6	228	24	4	3
Vascular disease.....	365	21.9	330	26	8	1
Diseases of the eye.....	72	4.3	69	3	..	..
.....	8	0.5	8	..	..	..
.....	1	0.1	1	..	..	..
.....	58	3.5	53	4	1	..
Neuritis.....	32	1.9	30	1	1	..
Obesity.....	73	4.4	59	11	2	1
Pleurisy, chronic, fibrous.....	29	1.7	27	2	..	..
.....	129	7.8	95	28	4	2
.....	7	0.4	7	..	..	..
.....	3	0.2	3	..	..	..
.....	6	0.4	5	..	1	..
Tonsillitis, chronic.....	162	9.7	143	13	5	1
Pulmonary tuberculosis.....	74	4.4	65	4	3	2
Total coexisting and complicating diseases.....	1,770		1,548	163	46	13
Total cases.....	1,663		1,473	149	28	13
Average coexisting and complicating diseases.....	1.1		1.1	1.1	1.6	1.0

ingly, the condition may be said not to be in any way related to the diabetic disease, except that the latter condition may have prolonged or accentuated the psychoneurosis. In forty-four instances it was not possible to ascertain whether a relationship between the two diseases existed.

Pulmonary tuberculosis, active and inactive, was found in 4.4 per cent of the patients. It was not much of a problem in the management of the diabetic condition.



A study of the various coexisting conditions found in diabetic patients indicates that the problem of the physician in the treatment of the diabetic patient is two-fold: first, the treatment of the diabetic condition and, secondly, the treatment of the complications and coexisting conditions. The complicating and coexisting conditions frequently have an unfavorable effect on the diabetic disease and on the prognosis of the case. It is the common experience of physicians treating diabetes that, no matter how well the patient is handled and how scientifically the dietetic regimen and insulin dosage are planned, the complications and coexisting diseases have an adverse influence on the therapeutic regimen.

#### COMMENT

This study of more than 1,600 living diabetic veterans includes two groups. One group gave evidence of diabetes during the military service, and the other group gave evidence of the disease at various intervals after discharge from the military service up to the time of this study. The survival period extending from the date of onset of the disease to the date of this study varied from six months to as long as forty-two years. These diabetic patients were treated by various regimens. In recent years, however, the treatment of the disease in the Veterans' Administration has been more uniform, owing to the standardization of its management, so that the results from now on will reflect the uniform treatment used. It must be realized, however, that while the management of the diabetic condition is standardized, the physicians treat their patients according to the indications present. Accordingly, the Veterans' Administration physicians find it necessary to deviate to a certain extent from the prescribed regimen because of individual characteristics of the diabetic patients and on account of the presence of complications or intercurrent diseases.

It would appear, therefore, that the results of the treatment of the various types of diabetes mellitus are not comparable, because of the varied regimens used in the past, and because of the existing variation in the clinical characteristics of the different cases. Accordingly, it is not possible to determine the therapeutic regimen which was found to be most effective in the treatment of this group of cases.

In reflecting on the diabetic patients included in this study, the first consideration is the classification of the diabetic disease. The study shows that the incidence of potential diabetes mellitus is higher among the group of veterans than is the experience in civilian life. It is possible that, as time passes, certain of the cases of potential diabetes mellitus will give evidence of being true diabetes mellitus and will be so classified. The incidence of unclassified diabetes mellitus is low. The reason is that, as the veterans grow older and become subjected to some of the diseases commonly associated with unclassified diabetes mellitus, the incidence of this type of diabetic condition may show an increase. The incidence of renal glycosuria is greater than in civilian experience. It is possible that some of the cases now classified as renal glycosuria may eventually be found to be cases of potential or true diabetes mellitus. Accordingly, the principal reason for the differences in the classification of the diabetic veterans as compared with civilian experience is the age of the veterans.

In this connection it is important to remember that the average age of the entire veterans' group (approximately 4,409,247) was 44 years at the time of this study and, furthermore, 93 per cent of this number,

or approximately 4,193,373, were World War veterans of an average age of 43 years. More than half of the diabetic patients gave a history of the onset of the disease within the age groups 30-39 years. Eighty per cent gave evidence of the disease before the age of 40, and 20 per cent after that age. The average age of the whole group at the time of onset of the diabetic condition was 33.7 years.

These observations support the opinion of Joslin and others that diabetes mellitus is not a manifestation of old age. As a matter of fact the age of onset of the diabetic condition in this group of veterans begins to ascend with the age group 25-29, it reaches its acme in the age group 30-39, and then it begins to descend. Whether or not the future will show a change of the statistical pattern and an increase will take place in the incidence of the onset of the disease as the veterans become older, similar to civilian experience, remains to be seen. Joslin observed that in his experience the acme of the onset of the diabetic disease occurred in the age period 50-54 years, during which time 14.4 per cent of the males of his group gave evidence of the onset of the disease.

Accordingly, it would appear that if measures are to be taken to overcome the disease it would be advisable to begin in the earlier age groups rather than in the middle life period. The data in this study point to the fact that diabetes mellitus is a disease of youth as well as of middle life.

In the consideration of the survival period of this group of diabetic patients it must be emphasized that they have been under treatment for various periods and by varied regimens; some of the patients have been treated with insulin and others without it. Those who have been under treatment for a number of years have recently been on a standardized regimen. The insulin treated patients with true diabetes have survived the disease on an average 9.1 years and are now of an average age of 42 years, while the small group of insulin treated patients with unclassified diabetes mellitus have survived the disease on an average 12.8 years and are now of an average age of 40.7 years. The patients with true diabetes not treated by insulin have survived the disease on an average 7.2 years and have reached the average age of 44 years; the veterans with potential diabetes have survived the disease on an average 6.7 years and are now of an average age of 42.3 years; the veterans with unclassified diabetes have survived the disease on an average 7.4 years and are now of an average age of 44.8 years; finally, the veterans with renal glycosuria have survived the disease on an average 12.5 years and have reached the average age of 43.

The variation in the survival period of the living diabetic patients is dependent on the length of time they have had diabetic disease to the date of the study. As these cases are still under treatment, the figures are not final. It is believed that the survival period of the patients not receiving insulin will eventually exceed that of the patients on insulin. This is based on the fact that the diabetic condition of those patients not receiving insulin is milder and that a larger percentage of these cases are being controlled as the result of the dietetic regimen used. The figures representing the survival period of the various groups of diabetic veterans should therefore not be taken as indexes of the comparative potency of the various regimens used.

In studying the duration period of the living diabetic veterans one is impressed with the fact that the average duration of the disease is more than nine years. When

one realizes that patients with a fatal form of the disease formerly died after a duration of the disease of 4.8 years following intensive treatment, one must conclude that an enormous advance has been made in the management of diabetes mellitus.

Of a total of 1,473 patients with true diabetes mellitus, 84.4 per cent had been treated with insulin and 15.6 per cent by diet and other measures. It is difficult to make a comparative estimate of the relative efficacy of insulin as compared with diet in the treatment of true diabetes mellitus, since patients with the disease in a milder form were usually placed on a dietary regimen, while the patients with severe diabetes were placed on insulin.

Of the group of 1,243 cases of true diabetes mellitus treated by insulin, 30.7 per cent were controlled, 46.8 per cent were partially controlled and 22.5 per cent were uncontrolled. Of the group of 230 cases of true diabetes mellitus not treated by insulin, 63.6 per cent were controlled, 25.7 per cent were partially controlled and 10.7 per cent were uncontrolled. This confirms the previous statement that the cases on insulin are more severe than those on a dietetic regimen; therefore a comparative evaluation of the efficacy of the two regimens cannot be made from the data available in this study.

In the discussion of the coexisting diseases of diabetes mellitus it was found that certain of the disabilities were related to the diabetic condition either as sequelae or as complications; others were intercurrent and unrelated infections or diseases. The conditions that might be considered related to diabetes mellitus are cardiac disease, arteriosclerosis, hypertension, psychoneurosis and obesity. The conditions that were found to be coexisting without in any way being related to diabetes mellitus are active and inactive pulmonary tuberculosis, chronic tonsillitis, arthritis, chronic bronchitis and kidney disease.

In this connection it is well to point out that any coexisting condition, especially an infectious disease, presents a problem that must be given serious consideration in the treatment of the diabetic condition. Frequently the dose of insulin must be increased to compensate for its reduced therapeutic effect because of the coexisting infection. Then, too, mild diabetic conditions that ordinarily can be treated by a dietetic regimen require insulin in order that the hyperglycemia and glycosuria may be controlled.

In the management of diabetes mellitus it is essential that the patient be discouraged from seeking hospital care for his diabetic condition, except in the early stages of the disease, or soon after the condition is diagnosed, at which time it is necessary for him to receive hospital instruction in the salient phases of the disease, in its dietetic management, in the technic of the self administration of insulin, in the treatment of hypoglycemia, and in the prevention of gangrene. As the disease lasts a lifetime, the patient should be permitted to treat himself from the standpoint of dietetics and insulin therapy. The physician, of course, must carefully supervise the patient's efforts in this direction. The patient should, in addition, be encouraged to earn a livelihood. He should exercise and should seek useful entertainment to overcome introspection.

#### SUMMARY AND CONCLUSIONS

1. Of the group of 1,663 living diabetic veterans included in this study, it was found that the incidence of potential diabetes mellitus was greater than in the

experience of Joslin and other observers. The explanation is that the veterans are a younger group of men of an average age of 43 years. It is possible that a number of the cases now classified as potential diabetes mellitus may eventually be found to be true diabetes mellitus. The incidence of unclassified diabetes mellitus was 1.7 per cent as compared with the experience of Joslin, who found that they constituted 10 per cent of a group of 13,000 diabetic patients. It is possible that a more direct relationship between coexisting disabilities and the diabetic condition will be established later as the veterans grow older, increasing the incidence of unclassified diabetes mellitus. The incidence of renal glycosuria is greater in this group than has been the experience of Joslin. It is possible that certain of these cases will eventually be classified as potential or true diabetes mellitus.

2. One hundred and forty-five, or 8.7 per cent, of the group gave a hereditary, familial or combined hereditary and familial history of diabetes mellitus.

3. Of the group of 1,663 diabetic veterans 850, or 51 per cent, gave evidence of the onset of the disease within the age groups 30-39 years. Furthermore, 80 per cent gave evidence of the disease before the age of 40 and 20 per cent after that age. The average age of the group of 1,663 veterans at the time of the onset of the diabetic condition was 33.7 years. The acme of the onset of the disease in the group studied appeared to be within the age group 30-34 years.

4. Of 1,473 cases of true diabetes mellitus, 84 per cent were being treated with insulin. Of twenty-eight cases of unclassified diabetes mellitus, approximately 32 per cent were on insulin therapy.

5. Of 1,252 living diabetic patients treated with insulin, 25.4 per cent have survived the disease from six months to five years, 31.5 per cent from five to ten years, 22.3 per cent from ten to fifteen years, and 20.8 per cent from fifteen to over eighteen years. The average survival period of this group of insulin treated diabetic patients to the date of this study has been 9.1 years.

Among 411 living diabetic patients who are not receiving insulin, 230 have true diabetes mellitus, 149 potential diabetes mellitus, nineteen unclassified diabetes mellitus and thirteen renal glycosuria.

Forty-five and seven-tenths per cent of the number have survived the disease from less than six months to five years, 29 per cent from five to ten years, 10.7 per cent from ten to fifteen years, and 14.6 per cent from fifteen to seventeen years or over.

Among the 230 cases of true diabetes mellitus not treated by insulin the average survival period to the date of this study has been 7.2 years. Among nineteen patients with unclassified diabetes mellitus not treated by insulin, the average survival period to the date of this study has been 7.4 years.

As these are living diabetic veterans, the average survival period for the various groups referred to will be greater as time passes.

6. Of 411 veterans under treatment for true, potential and unclassified diabetes mellitus, and also for renal glycosuria, and not receiving insulin, 72.3 per cent were controlled, 21.6 per cent were partially controlled and 6.1 per cent were uncontrolled.

Of the group of 1,243 cases of true diabetes mellitus treated by insulin 30.7 per cent were controlled, 46.8 per cent were partially controlled and 22.5 per cent were uncontrolled. Of the nine cases of unclassified diabetes

mellitus treated by insulin 66.7 per cent were controlled, 22.2 per cent were partially controlled and 11.1 were uncontrolled.

It is a fact that the diabetic cases in which insulin was not administered were of a milder type than those treated by insulin, so that a much larger percentage of the former had the disease controlled. Furthermore, larger percentages of insulin-treated cases showed partial control, and uncontrol of the diabetic condition, than were found in the cases not treated by insulin.

7. Among the total number of 1,663 diabetic patients, 1,770 coexisting or complicating diseases were noted, an average of 1.6 disabilities per patient. The most frequent coexisting disabilities were cardiac disease, arteriosclerosis, hypertension, psychoneurosis, obesity, active and inactive pulmonary tuberculosis, chronic tonsillitis, colitis, chronic bronchitis and kidney disease. Certain of the disabilities are in some way related to the diabetic condition either as sequelae or as complications. The other disabilities are merely intercurrent diseases or infections in no way related to the diabetic condition but having a profound influence on the treatment of the patients, especially those requiring insulin therapy.

## DURATION OF SPERM CELL MIGRATION IN UTERINE SECRETIONS

PRELIMINARY REPORT: MAXIMUM EIGHTY HOURS

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The purpose of this report is to present a few carefully checked observations as to the length of time sperm cells retain normal morphology and migratory power (not merely viability) in the reproductive tract of women, an important subject concerning which there is much vague speculation, many unsupported and widely varying opinions, and a paucity of convincing data.

Vignes and Boros,<sup>1</sup> as well as Belonoschkin,<sup>2</sup> state that the survival of spermatozoa is not very long and probably does not exceed forty-eight hours, owing to the higher temperature of the pelvis as compared to that of the scrotum. The former, however, quote observations made by Huhner<sup>3</sup> in which one case is included of sperm cells living as late as 102 hours after coitus. Macomber<sup>4</sup> reported finding living sperm cells in the cervical secretions four days after copulation in seven cases, and as late as seven days after contact in one instance. On the other hand, Moench<sup>5</sup> takes the position that body temperature kills sperm cells in twenty-four hours in most cases and states that observations of longer vitality become a moral rather than a scientific issue. Hartman and Ogmo admit the probability of somewhat longer survival of fecundating power. Macias de Torrès<sup>6</sup> and those who subscribe to the most conservative estimates of sperm cell viability are largely influenced by consideration of heat activa-

tion and cell exhaustion or by observation of sperm cell motility in the normal ejaculate or in artificial mediums. Although I have found that cervical temperatures range from 98.6 to 99.2 F., I can confidently assert that under favorable conditions large numbers of sperm cells continue in active migration in normal cervical mucus many hours beyond the time when all travel has ceased in a direct specimen collected from the same source and observed at room or body temperature. This suggests a chemical rather than a thermal explanation, which I am now planning to investigate. (At a lower temperature, 10 C., or 50 F., viability of sperm cells is said to be greatly prolonged, owing to retarded motility). In one case migration was noted in the cervical mucus at an interval six times as long as the duration of motility in the direct specimen. Stokes<sup>7</sup> calls attention to the fact that active sperm cells are found in the male ejaculate from two to three weeks after vasectomy and states that there is no reason to assume that the female generative organs are more hostile to sperm cells than the seminal vesicles.

Nürnbergers<sup>8</sup> two cases reported sixteen years ago in which living spermatozoa were found in excised tubes thirteen and fourteen days respectively after the last reported intercourse have been repeatedly quoted in subsequent literary comments. Actually, sufficient data have not been published to justify a consensus, and one hesitates to draw general conclusions from one or two cases when the apparent duration of viability is so at variance with the prevailing theory. Therefore the examiner should not be biased and his report should include such supplementary details as are required for scientific interpretation. The discovery of widely isolated sperm cells exhibiting motility without locomotion is not convincing evidence of sustained fertility.

Not only is the accumulation of reliable data in enough cases to justify general conclusions as to the survival of sperm effectiveness under normal conditions highly important to consolidate our knowledge of the sequence of events in fecundation, but it may explain otherwise irreconcilable errors in computing the date of delivery and could conceivably be relevant to certain medicolegal questions. Furthermore, this information is absolutely essential if the limitations of the safe period are to be postulated from the period of ovulation, a question now eliciting much scientific and popular interest. The practical application of this knowledge to the problems outlined must, however, ultimately depend on the determination as to whether the fecundating power of spermatozoa is lost prior to visible change in structure and cessation of migration.

Professor Hartman,<sup>9</sup> in an exhaustive study of ovulation in the higher primates, calculates the safe period on the assumption that the reproductive vigor of sperm cells rarely persists beyond the thirty-sixth hour. He and other animal experimentalists point out that in certain lower animals in which copulation can be controlled with regard to known time of ovulation the evidence indicates that sperm motility continues longer than the power of fecundation. Vignes and Boros quote the experiment of Datwyler, which shows that whereas bull spermatozoa live forty-two hours in

1. Vignes, H., and Boros, E. La période de fécondation et les périodes de stérilité physiologique, *Presse med* 42: 1002 1006 (June 20) 1934.

2. Belonoschkin, B.: Der gegenwärtige Stand der Spermatozoen-forschung, *Arch f. Gynäk.* 158: 345, 1934.

3. Huhner, Max: Diagnosis and Prognosis of Sterility in Both Sexes, *Am. Med.* 20: 8699 (Feb.) 1925.

4. Macomber: Personal communication to the Maternal Health Comm., New York.

5. Moench, G. L.: Viability of Sperm in Female Genital Tract, *Queries and Minor Notes*, J. A. M. A. 102: 806 (March 17) 1934.

6. Macias de Torrès, E.: Sur la vitalité des spermatozoïdes, *Gynéc. et obst.* 30: 544 551 (Dec.) 1934.

7. Stokes, W. R.: Biological Medical Aspects of Contraception, Nat'l Comm. Federal Legislation for Birth Control, Washington, D. C., 1934, p. 56.

8. Nürnbergers, L.: Klinische und experimentelle Untersuchungen über die Lebensdauer der menschlichen Spermatozoen, *Monatschr. f. Geburtsh. u. Gynäk.* 53: 87 101, 1920.

9. Hartman, Carl: The Time of Ovulation in Women, Baltimore, Williams & Wilkins Company, 1936.

Ringer's solution they survive only twelve hours in the uterine secretion. There is scant evidence that the secretion of the fundus uteri in human beings is more inimical to sperm cell survival than that of the cervix. If spermatozoa can lose their fecundating power by senility without alteration in morphology or serious impairment of motility, criteria are not available for accurate evaluation at the present time and the appraisal of the semen assumes greater difficulty.

#### CONDITIONS FAVORABLE TO INVESTIGATION

In the human species, reliable evidence on this subject is difficult to acquire. Conditions essential for investigation of maximum sperm survival include the good health of both sexual partners, a male specimen of normal characteristics and vigor, and cervical secretion in the female which provides a favorable medium for migration. Furthermore, there is evidence that in some women conditions most favorable to sustained motility are provided for only a limited part of the menstrual cycle. Several years ago I stated that in general the most satisfactory time for postcoital study was a few days subsequent to cessation of menstruation, owing to the increased secretion of less viscid mucus at that time, a condition often absent in patients with uterine hypoplasia. The reason was not then appreciated, but Papanicolaou, Hartman and other physiologists who subscribe to midmenstrual ovulation now consider increased secretion as a phenomenon of the high follicle period.

Because of the frequency of intercourse, the prevalence of contraceptive measures and the fact that the convenience of three persons is involved, it is difficult to arrange for proper timing of the examination. In my opinion deliberate arrangement solely for experimental purposes not only invites unadmitted errors due to conflict with the sexual habits of the couple but may introduce unpredictable factors which may vitiate the accuracy of results. Honest deductions cannot be drawn without confidence in the sexual history of the patient. It is obvious that such a happy combination of biologic conditions and concatenation of circumstances is not frequently presented by a woman who is forced to consult the gynecologist.

Granting that widely varying results may be reported in individual cases because of the many factors which affect the duration of sperm cell motility, it should be possible ultimately by accumulating reliable data to substitute fact for opinion as to average and maximum survival under normal conditions of fertility.

#### REPORT OF STUDIES

In 1929 I<sup>10</sup> reported an analysis of 250 postcoital studies made one hour after coitus and described the aspirating apparatus and technic modified after that of Huhner. At that time I was inclined to agree with Huhner that active sperm cells in the cervical mucus indicated the fertility of the husband. I have for some time questioned the accuracy of this conclusion, for motile sperm cells have been found in cases in which the direct male specimen was appraised as deficient according to the present criteria of evaluation. With the onset of the depression the technic was altered to enable out-of-town patients to make preparation at home, and it was noted that satisfactory studies could be made as late as six hours after coitus and, in occasional instances in which the husband was rendered

impotent by prescribed preparation, observations were successfully carried out from twelve to sixteen hours after intercourse. Thus, by evolution, my interest was recently stimulated in the later investigations.

The observations here presented were made incidental to other studies conducted under the favorable conditions previously outlined and in patients unaware of the nature of the examination, thus obviating any motive for deception. The cases reported are restricted to those in which an average of two or more well formed, actively migrating sperm cells per high power field were found in the deep cervical mucus and the patients, when interrogated subsequent to the examination, were able to fix the time of the last coitus at thirty-six hours or more before their visit. This arbitrary period was chosen because the observations of others and my own postcoital studies indicated that sperm survival in the female at periods of less than twenty-four hours was a frequent occurrence.

The term "normally migrating cells" refers to that characteristically undulating motion by which spermatozoa travel through a mucous medium in a more or less well sustained direction as opposed to the lashing tail with constantly changing direction noted in the seminal fluid, or the vibratory motion with sluggishly intermittent travel, or no change in position, noted in cervical secretion when the cell is exhausted or seriously obstructed by viscosity.

Four cases are abstracted in which migrating sperm cells were found from thirty-six to eighty hours after coitus. The report is necessarily preliminary in character as there is no reason to believe, under the conditions of examination, that the observations are exceptional or approach the potentialities of sperm survival.

CASE 1.—Mrs. E. M., aged 34, married two years, seen because of primary sterility, had uterine hypoplasia to a minor degree, and endometrial hyperplasia with stromal edema. Libido was reduced. There was mild hypothyroidism, but no other physical stigmas of endocrine disorder were present. The tubes were patent and menstruation was normal. The cervical mucus was highly variable as to viscosity without apparent reference to the menstrual cycle and therefore was frequently aspirated for study. Spermigration had previously varied from early failure to continuation at the twelfth hour. Feb. 28, 1933 (the fifteenth day of the cycle), normally migrating sperm cells were incidentally noted and the patient was able to fix the time of last coitus on the night of February 25, sixty hours previous to examination. Lacking precedent, the incredulity of the examiner persisted in spite of a positive patient, and the finding was simply recorded without the number of cells per field being noted. The husband was in vigorous health and a contemporary direct specimen showed a high cell count, with 88 per cent normal forms and well sustained motility not completely suspended at the twenty-fourth hour.

CASE 2.—Mrs. S. V., aged 28, was successfully treated for primary sterility associated with marked malnutrition, passive pelvic congestion, retroversion and cervical erosion, with secretion increased in amount and viscosity. Leukorrhea had persisted since early college years. One year subsequent to delivery this frail but determined patient complained of secondary sterility and insisted on more active management than the constitutional measures recommended. An appointment was made subsequent to the approaching period for restudy of spermigration. The patient came on the seventh day of the menstrual cycle without preparation and requested a tube test. Considerable clear mucus, occupying a gaping succulent cervix, was removed preliminary to insufflation and on microscopic examination from four to twelve vigorously migrating sperm cells were found per high power field. The canal was cleansed and another aspirating cannula easily passed to the cavity of the uterus, where a small amount of blood-stained mucus was

10. Cary, W. H.: Sterility Diagnosis: The Study of Sperm Cell Migration in the Female Secretions and Interpretation of Findings, New York State J. Med. 30: 131 (Feb. 1) 1930.

obtained, with similar results. The possibility of cervical contamination is admitted. Intercourse had occurred thirty-six hours before examination and the specimens were hardly distinguishable from normal one-hour postcoital examinations. Conception apparently occurred on the eleventh day of the second menstrual cycle thereafter. This experience altered my interpretation of the earlier case and stimulated subsequent interest in this subject.

CASE 3—Mrs H T, aged 27, with primary sterility, but no gross pelvic pathologic condition, was examined June 27, 1935, on the ninth day of the menstrual cycle. Clear, glistening mucus was aspirated from the cervical canal incidental to other study and when examined microscopically showed from two to four well formed, normally migrating sperm cells in each field. On inquiry the patient stated that the last intercourse occurred on Sunday night, June 23, approximately eighty hours previously. Confirmation of the date was received from the husband by telephone. A contemporary study of the husband's specimen revealed the total amount subnormal (from 2 to 25 cc), viscosity was variable, apparently because of undissolved mucus, the cell count was 73,000,000 per cubic centimeter, about 40 per cent of the cells were motile, with only a fair degree of traveling vigor, abnormal forms amounted to 13 per cent. The duration of motility was subnormal, showing marked reduction in five hours from four to five cells sluggishly crossing the field at the eighth hour and almost complete subsidence at the twelfth hour. This result was confirmed by subsequent examination. Under treatment this specimen improved as to total amount and sperm count, and initial motility was considerably increased but cessation in a direct specimen again occurred at approximately the twelfth hour. Nevertheless two contemporary examinations of the cervical mucus made thirty-six and sixty hours after coitus (the eighth and ninth days of the cycle) revealed in the first instance as many as sixteen spermatozoa per field with 33 per cent active travelers, on the following day, in spite of previous manipulation, most fields contained from one to four migrating cells. This indicates that, although motility may be an inherent quality of the cell, duration is controlled by the medium.

CASE 4—Mrs X, aged 35, seen Wednesday, Nov 20, 1935, a few days after the period, complained of one child sterility. This very tall, slender woman had not been well for some time, reporting a loss of 50 pounds (23 Kg) in eighteen months. Pregnancy was desired in the hope that she might regain the excellent health enjoyed during gestation six years previously. The uterus was retroverted, evidently complicating enteroptosis. A normal cervix contained clear mucus in abundance, and this was removed for viscosity study. Microscopic examination revealed from two to four normally migrating spermatozoa in each field, and while this was demonstrated to a confrere the nurse was sent to inquire as to the time of last coitus. Because of sexual routine the patient was able to state positively that coitus occurred at approximately 6 p m on the preceding Sunday, sixty four hours before her visit. As the patient was found to be suffering from hyperthyroidism the sterility study was discontinued and the husband's specimen was not examined.

Another finding of some interest but one that does not conform to specified requirements was made in a woman, aged 39, with uterine hypoplasia and scant cervical mucus slightly increased in viscosity, in which from one to three viable (motile but nontraveling) spermatozoa were found in occasional microscopic fields eighty-four hours after coitus. The husband's specimen exhibited unusual vigor. Dead or inactive sperm cells were not found in large numbers in any of these latest investigations, possibly owing to drainage in a mucous stream which vigorous cells ascend.

I have found most patients rather vague or uncertain as to the time of last coitus after a period of more than four days has elapsed. In three cases presenting favorable conditions "a week or so" after coitus, no sperm cells were found. Negative examinations are of little significance unless all factors conducive to sperm sur-

vival are known to exist. Some form of contraception is practiced by most patients unless they are consulting the physician for sterility, and in this group conditions unfavorable for this study are frequently met.

It should be stated that this contribution is offered in the hope of stimulating the publication of further data relevant to this important question.

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## OBSERVATIONS ON THE VARIATIONS IN BILE PRESSURE IN THE HUMAN BILIARY TRACT

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My purpose in this paper is to present some changes noted in the pressure of bile in the human biliary tract. The fact that these observations were made in the course of an examination of a patient for another purpose, and that subsequent review of the literature gives no similar record of bile pressure in the human being, leads me to think that perhaps these are original observations.

The patient who recorded these pressures was a man, aged 78, who had been jaundiced for more than two years. I operated on him, Jan 26, 1934, with a local anesthetic and found a benign stricture of the common bile duct at the ampulla of Vater. The gallbladder was greatly distended with 650 cc of clear light brown bile. The liver was greatly enlarged and intensely bile stained. The common bile duct was opened, explored with the finger and a probe 0.5 cm in diameter forced through the ampulla into the duodenum. I then performed a cholecystogastrostomy and placed a T tube in the common duct.

The patient had a stormy convalescence, during which time his immediate direct Van den Bergh reaction, with 185 mg of bilirubin per hundred cubic centimeters of blood serum, observed before operation, fell to normal. Bile was drained continuously through the T tube for several weeks and on March 9 he was discharged from the Mercy Hospital with the tube in place, closed with a small screw clamp and later a wooden plug. Bile pigment had meanwhile appeared in the stools and the icterus, with its accompanying pruritus, for relief of which he had sought operation, had disappeared.

Because of his age and general condition and the fear of the often reported ascending infection of the biliary tract in postoperative cholecystogastrostomy cases, I hesitated to remove the T tube from the common duct. From it at intervals, however, clear yellow bile was withdrawn, which showed at times a slight mucous sediment. No sign of infection made its appearance. However, there was always the question from the patient of how long he would have the tube.

I had the idea that, if the pressure of bile in the T tube was high its removal would be followed by a chronic bile fistula and early death. As generally known, either following cholecystostomy, in the presence of obstruction of the cystic duct, or choledochostomy, in obstruction of the common duct, if the obstruction has been removed and a clear flow of bile is obtained, the bile fistula closes promptly. This case

was complicated by the presence of an unrelieved obstruction at the region of the ampulla, as demonstrated by the injection of 15 per cent sodium iodide solution through the T tube (fig. 1) and the cholecystogastrostomy.

The patient was doing very well, so the T tube was left in the common duct. The bile was draining very well through the cholecystogastrostomy and in case this

distance traveled in the excursion of the fluid level in the manometer, certainly within the error of our crude method, this figure was considered bile pressure. The corresponding average pressure on the manometer on expiration, which would more nearly represent the normal tension of the bile in this system, uninfluenced by the extrinsic factor of respiratory effort, was  $5\frac{1}{10}$  inches, or 142.5 mm. of bile. This figure may then be taken as the approximately normal pressure of the bile in the common duct in this patient, in whom the biliary tract is not intact because of the closed sphincter of Oddi and the substituted outlet of cholecystogastrostomy, with a T tube in the common bile duct, leading to the exterior of the body.

The difference in pressure of 17 mm. of bile therefore represents in this instance the increase in pressure in this biliary tract, i. e., the common duct, produced by a normal inspiration. The variations in pressure in the biliary tract during the course of these observations, as noted in table 1 and figure 3, are small and the pressures tend to stay at a fairly constant level.

The exceptional variations in tension under the influence of other extrinsic factors were noted as follows: When the patient took a deep breath the pressure was raised both on inspiration and on expiration; on deep inspiration, 8 inches; on expiration after a deep inspiration,  $6\frac{1}{2}$  inches. When the patient coughed, the pressure rose to 14 inches, or 350 mm., and the pressure returned quickly to normal, so that in ten minutes it was at its previous tension. Another cough raised the pressure to 16 inches, or 400 mm. After this hard cough there was an appreciable lowering of tension in the bile tract, as noted. The pressure then on inspiration measured  $5\frac{1}{2}$  inches and on expiration  $4\frac{3}{4}$  inches.

TABLE 1—Common Duct Bile Pressure  
Measure in Inches of Physiologic Solution of Sodium Chloride

9/7/34 Time	Inspiration, Average 6.38	Expiration, Average 5.7	Comment
1:20	7.0	6.5	
1:25	7.25	6.75	*Cough (1)
1:30	7.25	6.75	
1:40	7.0	6.5	
1:50	6.25	5.5	
2:00	6.75	6.0	*Cough (2)
2:10	5.5	4.75	After coughing
2:20	7.25	6.5	
2:30	6.0	5.5	
2:40	6.5	5.75	
2:50	5.75	5.25	*Deep inspiration **Expiration (3)
3:00	6.0	5.25	
3:10	5.75	5.0	
3:20	4.5	5.5	
3:30	5.75	4.75	
3:40	6.0	5.5	*Laughing (4)
3:50	6.75	6.25	
4:00	7.0	6.25	After cream, milk and butter
4:05	6.25	5.25	
4:10	5.75	5.0	Desires to void
4:15	5.75	5.25	*Cough (5)
4:25	13.5	12.5	Standing

The numbers in parentheses refer to corresponding numbers in figure 3.

anastomosis opening became obstructed, I considered the well organized fibrous tract around the T tube a potential anastomotic duct, which could be implanted into the bowel.

In a further effort to determine the risk of removing the T tube, I thought that if the pressure in the tube was not high and since the patient was ambulant, if it was no higher when he stood erect than when he lay down it might safely be removed.

Sept. 7, 1934, I arranged a manometer with a 4 mm. inside diameter and a scale in inches (fig. 2) for the measurement of bile pressures. This was connected with the T tube in the common bile duct. The diameter of the manometer and the connections and the T tube was approximately the same. The connections of the system were filled with physiologic solution of sodium chloride to exclude air, and the bottom of the manometer was fixed at a level as nearly approximate as possible to that of the common bile duct, with the patient lying on his back.

The following observations were recorded on the fluctuations of the level of the pressure in the common bile duct as registered on the manometer:

Analysis of record of pressure variations is given in table 1 and figure 3. The variations in pressure as noted on normal inspiration and expiration were recorded every ten minutes. The average of the pressure readings on inspiration and expiration, with the exception of the wide fluctuations noted, so as to arrive at an average pressure of bile in the normal, quiet resting patient, lying on his back, in each of these respiratory phases was calculated. For normal inspiration, this amounted to  $6\frac{3}{100}$  inches, or 159.5 mm. of bile. Since the specific gravity of physiologic solution of sodium chloride and bile in the common duct is approximately the same, and discounting the difference in viscosity of the two solutions because of the short

TABLE 2—Common Duct Bile Pressure  
Measure in Inches of Physiologic Solution of Sodium Chloride

10/26/35 Time	Inspiration		Expiration		Comment
	Normal Av. 6.53	Deep Av. 8.8	Normal Av. 5.5	Deep Av. 5.58	
10:40	6.5	9.0	5.5	5.5	
10:45	6.75	9.5	5.75	6.0	Leg moved
10:50	7.5	10.0	6.25	6.5	Right leg flexed (1)
11:00	6.75	9.0	5.75	6.0	
11:05	6.5	8.5	5.0	5.5	
11:10	6.5	8.5	5.5	5.0	
11:15	6.5 *7.0	8.5	5.0	*6.25 5.5	*Talking (2)
11:20	6.5	9.5	5.0	6.5	
11:25	6.5 *10.0	9.0	5.5 *7.5	6.0	*Restless (3)
11:30	7.25 *14.0	9.5	6.0 *7.0	6.0	*Cough (4)
11:35	5.5	7.0	4.5	5.0	After coughing
11:40	5.5	6.5	4.75	4.5	Very quiet
11:45	6.5 *7.5	8.5	5.25 *6.0	5.75	*Talking (5)
11:50	6.5 *7.5	8.5	5.5 *6.5	5.5	*Restless (6)
12:00	6.5 *11.0	10.0	5.5 *7.5	6.5	*Restless (7)
12:05	7.0	10.5	5.5	6.0	Eating
12:10	7.5	11.0	7.0	7.5	After eating
12:15	7.0	9.0	6.5	5.5	
12:20	6.5	9.0	5.75	6.0	
12:25	7.25	10.0	6.0	7.0	Right leg elevated
12:30	8.0	10.0	7.25	6.5	
12:35	13.5	17.0	11.5	12.0	Sitting up
12:40	12.25	15.0	10.5	11.0	Sitting up
12:45	11.25	12.25	10.0	10.25	Standing
12:50	6.5	8.5	5.5	5.75	Lying down
12:55	6.5	9.0	5.5	5.0	Lying down

The numbers in parentheses refer to corresponding numbers in figure 4.

This effect was small but may indicate that the extreme elevation of the pressure on coughing may have caused a discharge of bile from the tract through its exit into the stomach sufficient to account for the lowering of the pressure. Another cough raised the pressure to 20 inches, or 500 mm.

Laughing raised the pressure to  $15\frac{1}{2}$  inches, or 387.5 mm. The patient was fed a fat meal and there



was apparently a slight rise in pressure. This rise may have been occasioned by increased peristalsis in the stomach or some other factors. This rise was followed by a fall in pressure. Considering the method and the percentage of error possible, this variation was not considered significant.

At this time I had the patient stand and the pressure rose to  $13\frac{1}{2}$  inches on inspiration and  $12\frac{1}{2}$  inches on

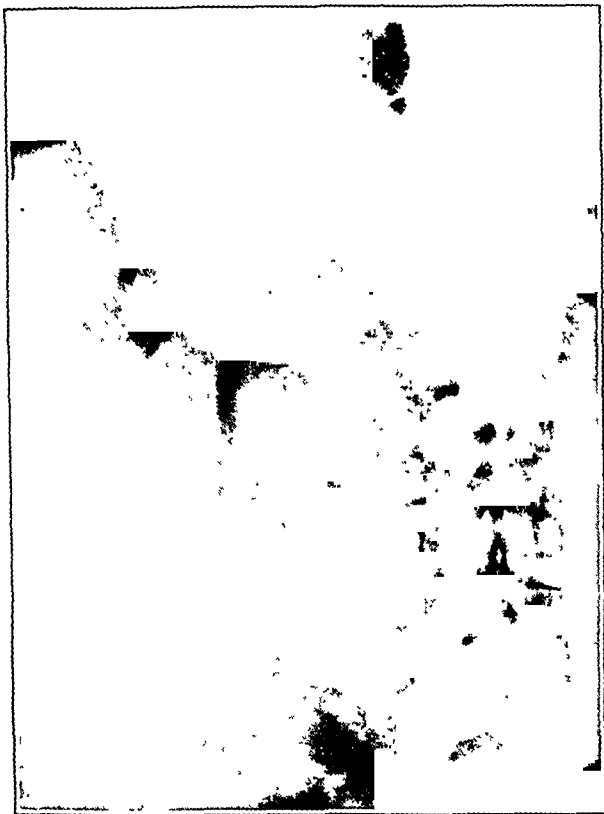


Fig. 1.—Sodium iodide injection of biliary tract.

expiration. This elevation of pressure in the duct, in the erect position, led me to postpone the removal of the T tube.

The patient continued for a year with the tube, experiencing slight inconvenience. No leakage of bile occurred around the tube. However, he was sufficiently annoyed to want the tube removed.

Oct. 26, 1935, another series of pressures was estimated by the same method. In this series of observations, as seen in table 2 and its accompanying graph (fig. 4), the pressure on normal and deep inspiration and the pressure after a normal and after a deep inspiration were recorded as well as the variations in pressure produced by other factors.

It was found that the average pressure on normal inspiration was  $6\frac{5}{100}$  inches, or 163.25 mm. of bile. This figure is approximately the same average pressure as in the preceding series of similar observations and serves as a fairly good check on the method, the former comparable reading being 159.5 mm. of bile. The average pressure on deep inspiration was  $8\frac{5}{100}$  inches, or 220 mm., of bile. The average pressure in this series after normal inspiration, i. e., normal expiration, was  $5\frac{1}{2}$  inches, or 137.5 mm., and after deep inspiration was  $5\frac{5}{100}$  inches, or 139.5 mm., of bile. These pressures were very nearly the same and compare closely to the observations under similar circumstances in the

series a year previously, which were  $5\frac{7}{10}$  inches, or 142.3 mm., of bile. The figures for expiration in the two series of observations are approximately the same and an average of the three average figures, or 139.8 mm. of bile, may be taken as the normal tension of the bile in the common duct in the patient's biliary tract.

Significant changes in pressure were also recorded on moving the patient's right leg, talking, coughing and restless moving about of the patient on the table, as seen in table 2 and figure 4. When the patient sat up on the table, moving the manometer to correspond to the change in position of the common duct, the bile pressure was increased to  $13\frac{1}{2}$  inches, or 337.5 mm., on normal inspiration, and 17 inches, or 425 mm., on deep inspiration, with a return to  $11\frac{1}{2}$  inches, or 287.5 mm., on expiration. These pressures were higher than those produced by the patient's standing. This is probably due to the fact that in the sitting position there was considerably more compression of the contents of the abdomen.

These elevations of pressure within the biliary tract of the patient, as recorded, caused me to be very hesitant to disrupt a working scheme in an elderly patient, subject to the possible accidents to his altered biliary tract. He was allowed to keep his T tube until Jan. 13, 1936, when, because of its being a possible cause of some epigastric discomfort, it was removed without difficulty and found to be open in good condition. Bile drained profusely from the opening until January 18, five days later, when it stopped. The wound has been healed since, without further drainage of bile. Bile appears regularly in the stool and there is no icterus.

The results obtained in these two series of observations on the variations in pressure in the human biliary tract, altered as it may be in this patient, are interesting when compared with the various observations made on the biliary tract pressures in dogs, particularly experimental work done on animals to determine the various forces which combine to cause a flow of bile from the liver cells into the duodenum. In this case the factor of sphincter control of the bile

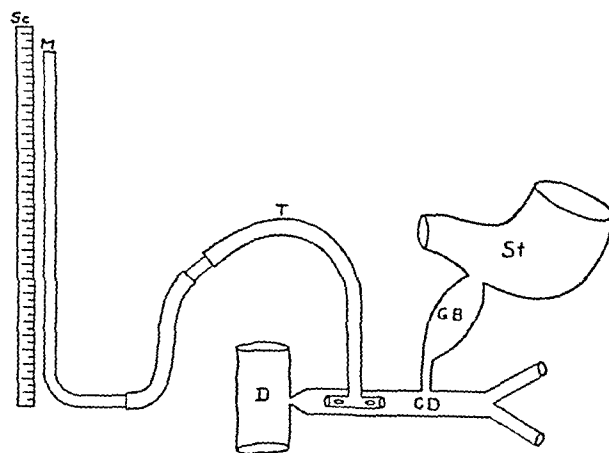


Fig. 2.—Design of apparatus for measuring bile pressure: Sc, scale; M, manometer; T, tube; CD, common duct; St, stomach; D, duodenum; GB, gallbladder.

entering the duodenum may be disregarded, as shown by the injection of the radiopaque sodium iodide solution. The duration of the patient's jaundice for a period of two years, however, would suggest that the obstruction at the ampulla of Vater was not complete. The fact that there was found at operation fairly

normal-appearing pigmented bile, rather than white bile,<sup>1</sup> in the greatly enlarged gallbladder, the walls of which were not disabled beyond the point of some degree of compensatory resorption, would suggest this conclusion. Judging, however, from these factors and the extensive bile staining and enlargement of the liver, the pressure necessary for bile to flow into the duodenum through this narrowed opening must have been very high. That the obstruction was becoming greater

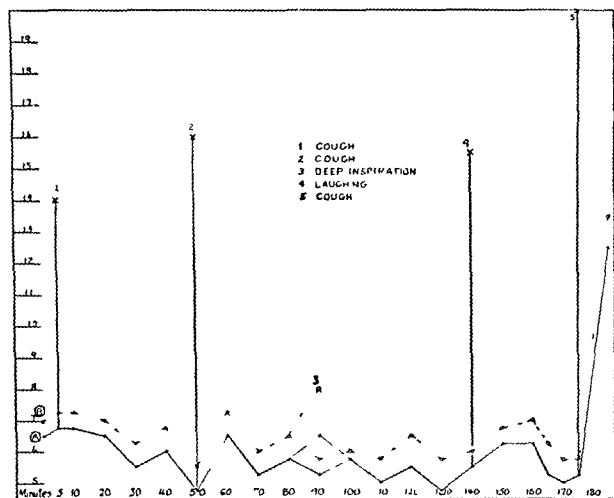


Fig. 3.—Bile pressures, Sept. 7, 1934 A, expiration, B, inspiration

is proved by the intensification of the patient's icterus and the rise in the bilirubin in the blood from 12.5 to 18.5 mg. in the two months preceding operation. The fact that no radiopaque solution flowed into the duodenum at the time of the visualization of the bile tract is suggestive that the ampulla was closed but further not conclusive, since the observations under the fluoroscope and the subsequent taking of films were continued for too short a time to tell whether or not some of the fluid might have entered the duodenum. However, since the hepatic ducts and the gallbladder were filled with the contrast medium, without the appearance of the iodide solution in the duodenum the ampulla of Vater must be rather firmly closed. The duodenum was not opened at the operation and the ampulla was not directly observed. Sufficient damage had been done the patient. The difficulty with which a probe was passed through the ampulla into the duodenum and the absence of any palpable stone or tumor, together with the fact that the patient still lives without icterus or palpable evidence of abdominal tumor, might be considered sufficient evidence of the presence of a benign stricture. Thus it may be assumed that in this case the ampulla of Vater is closed and thereby eliminated as a factor in the control of pressure variations in this biliary tract.

Experimental evidence of the rôle of the gallbladder in controlling bile pressure may then be considered. Introduction of a metal cannula into the fundus of the gallbladder in the experimental animal has appar-

ently not interfered with its contractile power. Potter and Mann<sup>2</sup> found a rise in pressure of 68 mm. of water in the gallbladder of the dog after a milk feeding, as compared to a rise of 35 mm. in the common duct. Therefore tonus, elastic recoil, as shown by Copher, Kodama and Graham,<sup>3</sup> and contractile power of the gallbladder, as demonstrated by Ivy,<sup>4</sup> may be considered in the presence of a cholecystogastrostomy.

The secretory pressure of bile, as measured in the dog by Winkelstein and Aschner,<sup>5</sup> amounted to from 60 to 70 mm. of bile. This, then, is an additional factor to be considered in maintaining the pressure recorded in the common duct.

Elman and McMaster<sup>6</sup> observed in a normal, unanesthetized dog that from 100 to 120 mm. of bile pressure produced a flow of bile in the duodenum from four to twelve hours after feeding, but that in a fasting dog between 200 and 300 mm. of bile pressure was necessary to cause a flow of bile into the duodenum. Potter and Mann<sup>2</sup> observed that the average biliary pressure in the quiet, intact, unanesthetized dog was 120 mm. of water, which they considered bile pressure. These men also record the resistance of the sphincter of Oddi to passage of bile into the duodenum as observed by others to vary from 60 to 625 mm., the average pressure, excepting the highest one, recorded by Oddi himself (625 mm.), being 158.5 mm. Therefore in dogs under experimental conditions a pressure of from 60 to 158.5 mm. of bile has been found necessary to produce a flow of bile through the sphincter of Oddi.

Regulation of flow of bile through the cystic duct has been studied; since it is a factor in this case, although the physiologic mechanism has been disturbed, the experimental observations are of interest. Winkelstein and Aschner<sup>5</sup> state that the cystic duct offers a resistance of 30 mm. of bile, while Rous and McMaster<sup>1</sup> found that a pressure of 60 mm. of bile was sufficient to fill the dog's gallbladder through the cystic duct.

In this pressure system the control of the opening between the gallbladder and the stomach remains to be

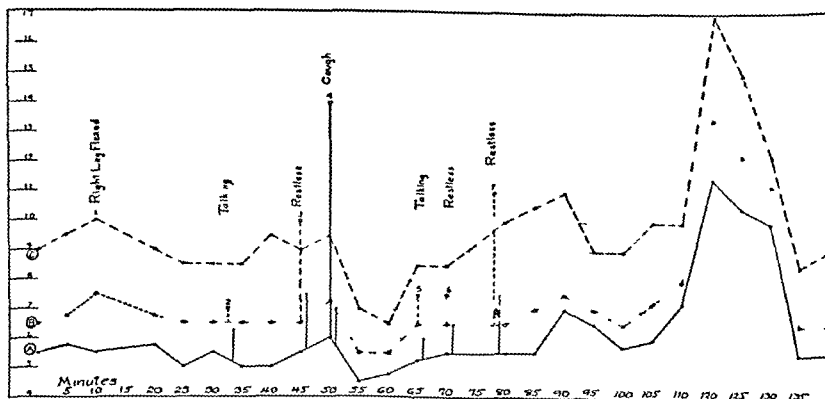


Fig. 4.—Bile pressures, Oct. 26, 1935. A, normal expiration, B, normal inspiration, C, deep inspiration.

considered. Its size is unknown and its variation in position and size under peristaltic movements and size of the stomach and posture of the individual is a matter of speculation. Bile has occasionally been regurgitated

2. Potter, J. C., and Mann, F. C. *Am. J. M. Sc.* **171**:202 (Feb.) 1926.
3. Copher, G. H.; Kodama, S., and Graham, E. A.: *J. Exper. Med.* **44**:65 (July) 1926.
4. Ivy, A. C.: *Physiol. Rev.* **14**:1 (Jan) 1934.
5. Winkelstein, A., and Aschner, P. W. *Am. J. M. Sc.* **171**:104 (Jan) 1926.
6. Elman, Robert, and McMaster, Philip: *J. Exper. Med.* **44**:151 (July) 1926.

from the patient's stomach. It has appeared regularly in the stool and there has been an absence of icterus.

It might be concluded, concerning the anastomotic opening, that the flow of bile into the stomach is regulated by the secretory pressure of the bile, the resistance of the cystic duct to its passage, the elasticity, tonus and contractile power of the gallbladder, the size of the opening, the peristalsis of the stomach and the extrinsic factors observed on the pressure records.

Since the mechanism provided at operation for this patient works and the bile pressures in man necessary to discharge bile into the duodenum or stomach are not recorded, the only figures with which to compare those recorded here are the figures for the experimental dog. Thus the average pressure in the human common duct, under these circumstances, in normal expiration is apparently 139.8 mm. of bile. With deep inspiration this pressure may rise to 220 mm. of bile, a rise in pressure of 80.2 mm. of bile. This increase in pressure in the human common bile duct, if the rise as recorded necessary in the dog is comparable, hardly suffices to force bile into the duodenum or stomach. However, on coughing, laughing, sitting up and standing, a rise of approximately 250 mm. to 260 mm. of bile in the human being would probably promote the flow of bile into the duodenum or stomach.

Might it not be too trite to suggest, in view of the rise in pressure in the biliary tract, in coughing, laughing and standing, that in our smoky Pittsburgh atmosphere our chronic coughs may have the virtue of alleviating to some degree the melancholy of our dark winter days by relieving us of some of our bile; that the old adage of "laughter with our meals makes for better digestion" has a physiologic basis, not only in the release of inhibitory impulses but also in increasing the flow of bile into the digestive tract? Finally, may we not consider our standing hot dog lunch counters a great advance from the time of the Romans, who ate reclining, to their detrimental disengagement?

The clinical value of these observations is problematic. Certainly with refinement in technic and a greater number of records in cases in which the biliary system is intact except for a tube in the gallbladder or common duct, with simultaneous observations of the movements of the duodenum and the appearance therein of bile, the normal response to food, chemicals and drugs and other extrinsic factors may be studied and a better understanding of the human mechanism of the flow of bile achieved.

#### CONCLUSIONS

1. Certain variations have been noted in the pressure of bile in the human common bile duct.
2. Extrinsic factors have been demonstrated which may influence the flow of bile.
3. The healing of biliary fistulas is accomplished by factors other than the lowering of pressure within the biliary tract.

**Diagnosis of Yellow Fever.**—I can remember when it was believed that an expert could make a diagnosis of yellow fever even in mild cases just from the clinical symptoms. After studying the disease in an endemic center from 1906 to 1910, I gave it up and said that I at least could not. Today we know that in endemic centers it frequently happens that the majority of cases occurring in the local population are unrecognized. Time and again in recent years by blood surveys and protection tests it has been found that yellow fever has occurred off and on for years in certain localities without its presence having been known.—Lloyd, B. J.: *Public Health Significance of Our Newer Knowledge of Yellow Fever, South. M. J.* 29:533 (May) 1936.

## PRESSURE IN THE COMMON BILE DUCT OF MAN

### ITS RELATION TO PAIN FOLLOWING CHOLECYSTECTOMY

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The importance of the function of the sphincteric mechanism at the lower end of the common bile duct and the clinical application of knowledge concerning it in the management of disease of the biliary tract have of late been receiving a great deal of attention. Ivy and Sandblom<sup>1</sup> in this country, Schmieden and Niessen<sup>2</sup> in Germany and Pavel<sup>3</sup> in France have been in the fore in the elucidation of the types of biliary dyskinesia and of the symptoms which they produce. These men have applied knowledge gained from animal experimentation to clinical studies of cases and to operative results.

We have interested ourselves in direct measurement of changes in physiologic functions of the common bile ducts of human beings who have disease of the biliary tract. With the consent of the persons concerned, we have determined changes in pressure in the common bile duct of individuals into whose common bile duct a T-tube has been inserted previously, in the course of operation, for prolonged biliary drainage. Reports of direct measurement of pressure in the common bile duct of man have not been found in the literature. Cholechochography has proved to be a valuable adjunct to our studies.

The existence of a sphincter, the first description of which by Gage<sup>4</sup> was later amplified by Oddi,<sup>5</sup> or the exact anatomic nature of a sphincter, is not our concern. The functional capacity of the sphincteric mechanism at the lower end of the common bile duct, and not the question of exactly what muscle fibers are included in its structure, has engaged our attention.

#### REVIEW OF RELEVANT LITERATURE

Judd and Mann<sup>6</sup> in 1917 drew attention to the importance of the sphincter of the common bile duct in surgical conditions when they demonstrated the dilatation of the common bile ducts of dogs that follows removal of the gallbladder. They showed that this dilatation does not occur when the sphincter of the common bile duct is cut at the time of cholecystectomy. Changes of pressure in the common duct were measured by Potter and Mann<sup>7</sup> by inserting a T-tube into the common bile duct of the dog. They discovered that pressure in the duct increased markedly following cholecystectomy. They found that rhythmic

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From the surgical service of Dr. Waltman Walters.

1. Ivy, A. C., and Sandblom, Philip: *Biliary Dyskinesia*, *Ann. Int. Med.* 8: 115-122 (Aug.) 1934.

2. Schmieden, V., and Niessen, H.: *Dyskinesie der Gallenwege (Cholepathia spastica) und Chirurgie*, München. med. Wchnschr. 80: 247-250 (Feb. 17) 1933.

3. Pavel, I.: *Ictère par obstacle fonctionnel dû au spasme du sphincter d'Oddi avec examen anatomique*, *Presse méd.* 2: 1948-1950 (Dec. 24) 1932.

4. Gage, S. H.: *The Ampulla of Vater and the Pancreatic Ducts in the Domestic Cat (Felis Domestica)*, *Am. Quart. Micro. J.* 1: 128; 169, 1879.

5. Oddi, Ruggero: *D'une disposition à sphincter spéciale de l'ouverture du canal cholédogue*, *Arch. ital. d. biol.* 8: 317-322, 1887.

6. Judd, E. S., and Mann, F. C.: *The Effects of Removal of the Gallbladder: An Experimental Study*, *Surg., Gynec. & Obst.* 24: 427-442 (April) 1917.

7. Potter, J. C., and Mann, F. C.: *Pressure Changes in the Biliary Tract*, *Am. J. M. Sc.* 171: 202-217 (Feb.) 1926.

changes in pressure occurred and that the pressure could be influenced by the diet of dogs; that milk caused the highest pressure, that dog biscuits gave an intermediate reaction, and that fasting was accompanied by the lowest pressure. Giordano and Mann<sup>8</sup> showed that alkali placed in the duodenum increased, and that acid decreased, the resistance of the sphincter of the common bile duct of the dog. They also demonstrated

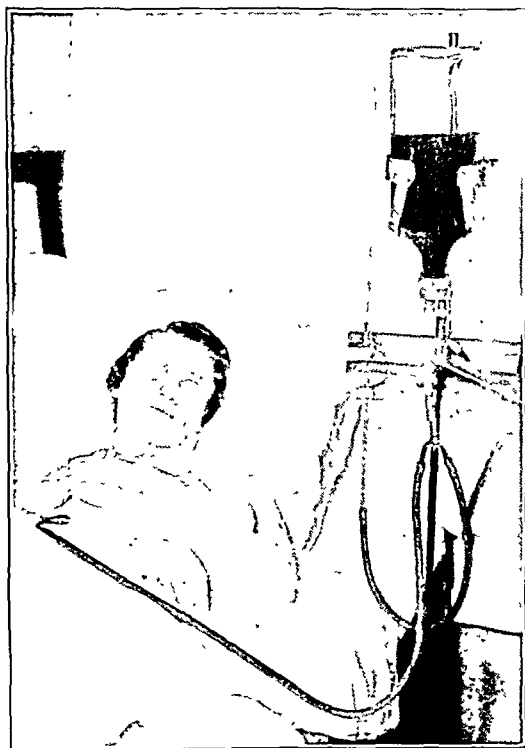


Fig. 1.—Apparatus connected to T-tube. This picture was taken shortly after administration of morphine; the fluid in the manometer has started to rise.

specimens obtained at postmortem examination of human beings who had had cholecystitis and duodenal ulcer; the musculature of the sphincter had undergone hypertrophy.

Physostigmine, pilocarpine, nicotine and acetylcholine have been found to increase pressure in the duct, whereas scopolamine, atropine and epinephrine decrease it.<sup>9</sup> Kitakoji<sup>10</sup> found that morphine causes the sphincter to contract, a fact that has been of much use to us.

#### INVESTIGATIONS THAT LED UP TO THE PRESENT STUDY

In the autumn of 1934, Thiessen and one of us (Walters<sup>11</sup>) carried out studies on the physiology of the

8. Giordano, A. S., and Mann, F. C.: The Sphincter of the Choledochus, *Arch. Path. & Lab. Med.* 4: 943-957 (Dec.) 1927.

9. Brugsch, Theodor, and Horstmann, Hans: Cholangiologie und Cholangie, *Arch. f. exper. Path. u. Pharmacol.* 118: 267-312, 1926. Burget, G. E.: The Regulation of the Flow of Bile: II. Effect of Eliminating the Sphincter of Oddi, *Am. J. Physiol.* 79: 130-134 (Dec.) 1926. Grebe, Arnold: Erweiterung unserer Kenntnis über die Wirkung "ruhigstellender" Pharmaka auf die Funktion des extrahepatischen Gallenwegesystems, *Ztschr. f. klin. Med.* 115: 446-453, 1931. Shi, K.: The Influence of the Gallbladder, Oddi's Muscle and the Duodenum upon the Outflow of Bile: Injection of Visceral Nerve Poisons and Pituitrin, *Japan. J. Gastroenterol.* 5: 19-25 (April) 1933. Westphal, Karl: Muskelfunktion, Nervensystem und Pathologie der Gallenwege, *Ztschr. f. klin. Med.* 96: 22-150, 1923.

10. Kitakoji, Yoshiharu: Studien über die Funktionen der Gallenblase und des Oddischen Muskels in Bezug auf die Absonderung der Blasen-galle: I. Mitteilung. Ueber den Einfluss von Nervengiften auf die Funktionen der Gallenblase und des Oddischen Muskels, *Nagoya J. M. Sc.* 3: 24-29 (Nov. 20) 1930.

11. Walters, Waltman, and Thiessen, N. W.: Visual Methods of Studying the Physiology of the Common Bile Duct: I. The Problem of Pancreatitis and Sphincteritis, *Proc. Staff Meet., Mayo Clin.* 9: 772-775 (Dec. 19) 1934.

common bile duct by injecting into it bromipin, a substance that is opaque to roentgen rays. These studies were reported in detail at the meeting of the Interstate Postgraduate Medical Assembly in 1935. Following introduction of bromipin, if there was any persistent pancreatitis with narrowing of the bile duct, any reflux of bile into the duct of Wirsung or any disturbance of the sphincter of Oddi, roentgenograms gave evidence of the conditions.

It has been recognized that residual pancreatitis might lead to recurring attacks of abdominal pain, like that of biliary colic, but narrowing of the pancreatic portion of the common duct caused by swelling of the pancreas has not been emphasized as a mechanism by which the attacks are produced. Generally speaking, too little attention has been given to the effect of reflux of bile into the duct of Wirsung as a causative factor of pancreatic swelling. Similarly, abnormal function of the sphincter of Oddi, either from inflammation, spasmodic contraction or fibrotic stenosis, has not received the attention and study which it deserves as a factor in producing biliary stasis.

#### METHOD OF PRESENT STUDY

These studies were made in cases in which the gallbladder had been removed and a T-tube had been left in the common bile duct for drainage. The apparatus for measuring changes in pressure in the common bile duct consisted of a spinal fluid manometer fitted in the vertical position on a frame attached to a ring stand (fig. 1). The manometer was connected to the T-tube in the common duct by means of a rubber tube. This rubber tube was interrupted in the middle by a glass Y-tube, one limb of which was attached to the rubber tube on the manometer while the other was connected

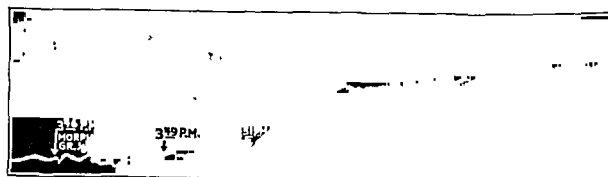


Fig. 2.—Intraductal pressure following administration of one-sixth grain (0.01 Gm.) of morphine subcutaneously.



Fig. 3.—Intraductal pressure during spontaneous pain: Three short cramps represented in the upper line; one long pain in the lower. P, pain; C, cramp; L. P., less pain; S. P., slight pain; O. P., no pain.

to the rubber tube that led to the T-tube in the common duct. The stem of the glass Y-tube was attached by means of a rubber tube to a bottle which acted as a reservoir for physiologic solution of sodium chloride. This type of bottle has been described previously by Osterberg and Little.<sup>12</sup> The rubber tubes were filled with saline solution from the bottle, and the rubber

12. Osterberg, A. E., and Little, G. G.: An Apparatus for the Preparation and Intravenous Administration of Various Fluids in Large Quantities, *Proc. Staff Meet., Mayo Clin.* 10: 241-245 (April 17) 1935.

tube leading from the reservoir was then clamped off. This left a continuous column of fluid from the common duct to the manometer.

To take the readings, the reservoir bottle was held in the hand at a low level. It was gradually elevated until the solution was flowing freely, which was indicated by air bubbling up into the bottle. The pressure at this point was that necessary to force the solution into the duodenum. This is referred to as the "perfusion" pressure. When the tube to the reservoir bottle was clamped off, the pressure as recorded in the manometer fell at a variable speed to a fixed level.

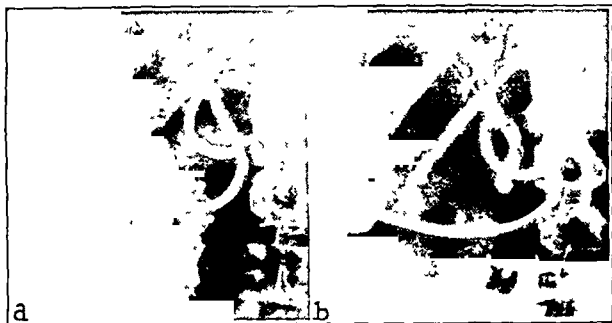


Fig. 4.—Cholangiograms. *a*, without morphine; *b*, seven minutes after administration of morphine.

which is referred to as the "intraductal" pressure. As the pressure in the common duct increased, the fluid in the manometer rose. For the purpose of making permanent records, a U-shaped tube in the form of a water manometer, with a float and writing styllet on one side, was substituted for the spinal fluid manometer; changes in pressure were recorded on a smoked drum.

The method used for making roentgenograms of the common duct was as follows: A sterile 10 cc. Luer syringe was fitted into the end of the T-tube and the bile was aspirated. Five cubic centimeters of lipiodine was injected and a roentgenogram was made. The opaque substance usually went in without much pressure. The process was repeated for verification five minutes later. Morphine, one-sixth grain (0.01 Gm.), was then given subcutaneously and the pressure manometer was connected to the T-tube. When the full morphine effect was present, as was indicated by the reading of pressure, the manometer was disconnected. Bile flowed freely from the T-tube for a time. The content of the T-tube was then aspirated in order to remove as much bile as possible from the biliary system.

The opaque substance was then injected slowly. From 3 to 5 cc. went in easily, at which point a sensation of pressure was transmitted to the hand from the syringe. Injection was then stopped and a roentgenogram was made.

#### RESULTS

Studies of pressure were made on fifteen occasions; the subjects were eight different patients and all of them were at rest while the studies were in progress. The pressure, measured by a column of fluid above the level of the abdominal wall, ordinarily is between 0 and 30 mm. of water. Respiratory excursions cause the pressure to rise from 5 to 10 mm. of water. A more detailed report of the intraductal pressure in different conditions will be given later.

It was found that morphine sulfate, one-sixth grain (0.01 Gm.), given subcutaneously, produced an increase in intraductal pressure on fourteen occasions (fig. 2). Pressure began to rise from two and a half to four

minutes after administration of morphine. It rose rapidly and reached a plateau from ten to fifteen minutes after the injection.

Rise in pressure was associated with constant pain in one case. This pain was situated in the right upper abdominal quadrant and extended around the right subcostal margin. Pain also was present at the same time in the right scapular region and extended up toward the right shoulder. This was the same type of pain from which this patient had suffered since removal of her gallbladder a year previously. She would wake after midnight, frequently in pain. Attacks were often severe, lasted as long as an hour, and were accompanied by nausea. In addition, she complained of frequent cramps in the right upper abdominal quadrant, which came and went during the day.

The manometer was connected to the T-tube on two separate days and was left in place for several hours in order to get a reading in the course of an attack of pain. In all, five attacks of pain occurred in the course of the study, and accompanying each was a rise in pressure (fig. 3). The duration and severity of the pain corresponded in each case with the size of the pressure curve. On one occasion the pressure was as high as 160 mm. of water. The manometer was so situated that the patient was unable to see it, ruling out, as far as possible, any psychologic element.

The pain that followed administration of morphine began shortly after the pressure started to rise. It became increasingly severe in the next ten minutes and then gradually became less severe, no doubt because of the analgesic action of morphine on the higher nerve centers.

Pain persists throughout the whole time of the rise in pressure, which is about two hours. Because of inconvenience to patients, the pressure curve was not followed to its conclusion on more than two occasions. The pressure rises, under the influence of morphine, from 0 to 200 or 350 mm. of water. The perfusion pressure is also elevated, usually from 140 mm. to 400 or 600 mm. of water. The point and mode of action of



Fig. 5.—Cholangiograms: *a*, without morphine; intraductal pressure at 20 mm water, and *b*, thirty-one minutes after administration of one-sixth grain (0.01 Gm.) of morphine subcutaneously; intraductal pressure at 120 mm water.

morphine on the biliary system offers a large field for speculation. This much evidence is available: 1. Fluid can be made to flow from the common bile duct into the duodenum after administration of morphine only by increasing the pressure. In other words, the perfusion pressure is increased. 2. Roentgenograms made before administration of morphine give evidence of rapid emptying of the common duct; the opaque medium usually is found in the duodenum. Roentgenograms of the same patients after administration of morphine give evidence of distention of the common duct.

Opaque substances remain in the hepatic ducts and smaller branches of the biliary tree and the lower end of the common duct tapers to a sharp point, suggesting muscular spasm; the picture is not unlike that of the esophagus in the presence of cardiospasm (figs. 4 *a* and 4 *b* and figs. 5 *a* and 5 *b*).

Since muscle spasm suggested itself as the main factor in the phenomenon described, drugs that might cause relaxation were tried to counteract the spasm caused by morphine and subsequently to relieve the patient's pain. A therapeutic dose of the relaxing drug was given in order to be sure that it did not produce a rise in pressure. Then morphine, one-sixth grain

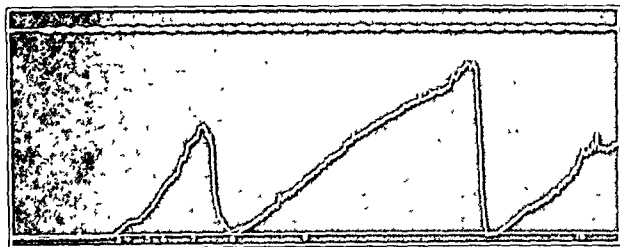


Fig. 6.—Effect of amyl nitrite at the height of pain that followed administration of morphine. Inhalation of amyl nitrite brought a complete drop in pressure and relief of pain. As the effect of amyl nitrite wore off, morphine again produced an increase in pressure, which was again relieved by inhalation of amyl nitrite. (Each stroke of the timer represents five seconds; each group of strokes represents one minute.) At 2, morphine was given; at 5 the patient complained of cramping pain; at 6, pain was severe; at 8, pain had disappeared; at 9 and again at 10 it had returned.

(0.01 Gm.), was given subcutaneously. When the pressure reached the peak, a second dose of the relaxing drug was given to see if it would lessen the pressure caused by morphine. No depressor effect was produced on the morphine curve by atropine, histamine, phenobarbital sodium, alcohol or acetylsalicylic acid. A definite transitory decrease was noticed after small doses of epinephrine, but it made the patient uncomfortable.

The drug that produced complete disappearance of pressure and absolute relief of pain was amyl nitrite. A few whiffs of this drug almost at once brought the pressure down to zero, where it remained for a few minutes and slowly returned, after about fifteen minutes, to the level at which it had been after administration of the morphine. At the same time that the pressure fell, the patient was completely relieved of pain (fig. 6).

Glyceryl trinitrate produced a partial effect. It was about a third as effective as amyl nitrite in depressing the curve that followed administration of morphine. However, it seemed of sufficient effect to cause relaxation of the spasm which produces the pain from which the patient ordinarily suffers. At present the patient mentioned in a preceding paragraph is being given one one-hundredth grain (0.0006 Gm.) of glyceryl trinitrate when she has an attack of pain. She claims relief in from five to ten minutes. However, the symptoms are subjective and it is very difficult to measure the amount of relief. After a year it has been found that although the various analgesics, very frequently morphine, do not relieve pain, glyceryl trinitrate always does relieve it. The patient has been under this treatment for two weeks. In that time she has improved objectively. She has gained weight and her general appearance is much better than before.

We have under observation at this time one other case. The patient is a man, aged 32 whose gallbladder was removed elsewhere in 1927. Since that time he has suffered attacks of very severe pain in the right

upper abdominal quadrant at intervals of months, weeks or days; the attacks have lasted from fifteen minutes to eight hours. It was found very early that morphine would not relieve the pain, which was so severe that at times the patient would take 12 grains (0.77 Gm.) of sodium amytal and a pint (about one-half liter) of whisky. After administration of morphine, one-sixth grain (0.01 Gm.), as a test, cramping epigastric pain developed and gradually became more severe; later it became excruciating. An ampule of amyl nitrite was broken. After inhaling the fumes the man obtained immediate and complete relief. In ten minutes pain began to return in a mild form; one-hundredth grain (0.0006 Gm.) of glyceryl trinitrate brought relief after five minutes. In one hour pain returned; in five minutes it was again relieved by administration of glyceryl trinitrate; following this pain did not return.

#### SUMMARY

Administration of morphine produces a rise in pressure in the common bile ducts of patients whose gallbladders have been removed. This rise in pressure was accompanied by pain in one case. Periodic rises in pressure, with pain, have been demonstrated independent of the effect of morphine. Amyl nitrite and glyceryl trinitrate relieve the pain and pressure produced by morphine. Roentgenograms of the biliary tree can be made easily if a patient's gallbladder has been removed and drainage by T-tube is in progress. After proper preparation, a fluid that is opaque to roentgen rays can be injected through the T-tube; then the roentgenograms are made.

## STOMATITIS DUE TO SENSITIZATION TO DENTAL PLATES

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It is not generally recognized either by physicians or by dentists that an irritant stomatitis may result in a susceptible person from sensitization to materials in dental plates, particularly the newer synthetic substitutes for rubber plates. Three such cases have recently come to my attention:

CASE 1.—Mrs. T., aged 60, formerly a nurse, for years had worn full upper and lower plates made of vulcanite. They had never been entirely comfortable, apparently because of a poor fit, but the discomfort at most was never sufficient for her to do anything about it. Three years ago she had new plates made of a substance said to be hocolite. She wore them with complete comfort for three months. Then there developed burning tongue and shortly after that a peculiar salty taste accompanied by slight increase in salivation. The symptoms were always more severe at the end of the day, to improve over night when she did not wear the plates. But the condition became progressively worse, so that when she was seen in November 1935, in addition to the severe burning tongue and the salty taste she complained that the entire mouth was sore, including the gingivae, the buccal mucous membranes, the floor of the mouth and the palate. The lips felt dry and she suffered from nausea, frequent eructations and, as she expressed it, "a weak feeling in the stomach." At the end of the day there would be a thick glairy discharge from the mouth.

She had been assured by her dentist that there were no mechanical imperfections in the dentures to account for the symptoms, and repeated examinations by physicians also failed to reveal any cause for the symptoms.

On examination there was a diffuse inflammatory reaction of the mucosa of the entire oral cavity from the vermillion



border of the lips to the pharynx. There was increased redness, very slight swelling and considerable serous exudate. The floor of the mouth and the buccal mucous membranes were involved to a lesser degree. The tongue was slightly enlarged. There were no ulcers or necrotic areas, and the vermillion surfaces of the lips were dry but not cracked.

The past history revealed that on one occasion in childhood the patient had had urticaria. To her knowledge there were no other indications of allergic diseases in herself or in other members of her family.

The sequence of symptoms beginning shortly after the wearing of a new denture suggested that the patient might be sensitive to something in the plates, especially since there were no other phenomena either medical or mechanical to account for the symptoms. A patch test was performed by strapping the plate to her arm, on the inner surface where the skin is thin. Forty-eight hours later there was an area of vesicular dermatitis on the site, which, as is shown in the illustration, was a mirror image of the plate in both size and shape. The same plate was then strapped to the skin of two other persons without producing a reaction. Within one week after she stopped wearing the plates there was a very striking improvement in both the stomatitis and the gastric symptoms. By the second week she was able to take fruit juices and spicy foods, which for the past two years she had been unable to tolerate. When some weeks later, just for a clinical test, she wore the plates again, there was a recurrence of all the symptoms within four hours. The patient continued to have slight burning of the tongue, much less however than with the original plates. Examination revealed a hypochromatic anemia, no free hydrochloric acid in the gastric contents, and slight atrophy of the tongue. A patch test with vulcanite was negative, with the original dentures it was again positive, and on wearing them there was again a recurrence of acute stomatitis.

CASE 2.—Mrs. M. C., aged 62, complained of burning tongue of about four years' duration. Her dental plates were also said to be made of hecolite, and she had worn them only a short time before the burning tongue began. The burning was intermittent in character and variable in severity. Usually she experienced the burning sensation only on the tip or sides of the tongue. Spicy foods aggravated the discomfort, and as with the first patient the symptoms were worse at the end of the day, and physicians and dentists had been unable to account for the symptoms. A patch test with the plate strapped to the arm produced a severe vesicular reaction within twenty-four hours. A change to vulcanite plates afforded decided relief from burning tongue within a relatively short period.

CASE 3.—A man, aged 50, had worn vulcanite plates with comfort for several years. The upper plate was accidentally broken and a triangular patch had to be inserted, just proximal to the central incisors. The patch was made apparently of one of the newer base materials that are used as a substitute for vulcanite. Within four days he felt burning of the tip of the tongue, and after a few days the area became red. Both symptoms and inflammation disappeared over night when the plate was not worn. The area of redness on the tongue was triangular and of the same size as the new patch on the plate, and it was situated where the tongue touched the patch—obviously a "contact" glossitis. His dentist could not find any mechanical fault to account for the symptoms, and because of the experience with the two previous cases it was thought that this was another case of sensitization to dental plates. A patch test on the arm made with scrapings from the insert in the plate, however, was negative. The negative test here may mean simply that in this patient the sensitization is confined to the tongue, a localized sensitization, or the inflammation of the tongue may be due to chemical irritation.

#### COMMENT

The cases were a new experience to me and when I casually mentioned it to several colleagues, medical and dental, it was apparent that the condition was new to them. In a fairly thorough search of the pertinent literature I was able to find an account of but one similar case, that of Lindsay, quoted by Lain.<sup>1</sup> Prinz

and Greenbaum<sup>2</sup> also state that they have seen hypersensitiveness of the oral mucosa following the use of dental plates made of the newer base materials.

It is not unknown for sore mouth to develop after vulcanite plates have been worn, although it occurs relatively infrequently. "Rubber sore mouths" have been known ever since vulcanite has been used in plates,<sup>2</sup> and the subject has been fully discussed in dental literature. It is the consensus that the sore mouths are due probably to a combination of factors. The plate resting on the mucous membrane acts as a foreign body, which during mastication and speech mechanically irritates the mucous membrane, especially if it "rides the mucosa." There is as a result abnormality in the circulation of the mucous membranes and in its secretions. In addition the plates are not self cleansing, so that there may be an accumulation of food debris, and they are poor conductors of heat. Other factors, such as imperfect vulcanization causing porosity of the plate, and the possible poisonous action from chemicals used in the pigments, are also thought to be important in the development of sore mouths from dental plates. That dentists have been able to overcome most of these objections is evident from the fact that probably



Positive patch test from dental plate.

millions of people wear dental plates without discomfort. These and mechanical faults are usually sought in cases of sore mouth, but that the condition might be due to sensitization to the materials in the plates is not generally considered.

When the first patient was seen, a letter was addressed to the manufacturers of the denture material stating the facts and asking for information that might help to ferret out the irritating ingredient. They answered to the effect that there was nothing in the material that in any manner would cause chemical irritation, and they suggested that the symptoms were probably due to mechanical pressure. This, of course, does not account for the positive reaction to the patch test on the arm, which is made even more significant by the negative tests on two control patients. The newer base materials used as substitutes for vulcanite are made up essentially of cellulose treated with various chemicals and then combined with pigments, fillers and other substances. Others consist of phenol-resin compounds containing phenol, formaldehyde, ammonia, coloring matter and fillers. As Prosser White<sup>3</sup> has pointed out, coloring with chrome, polishing with lime

1. Lain, Everett: Chemical and Electrolytic Lesions of the Oral Cavity Produced by Metallic Dentures, *Arch. Dermat. & Syph.* 25: 21 (Jan.) 1932.

2. Prinz, Hermann, and Greenbaum, S. S.: Diseases of the Mouth and Their Treatment, Philadelphia, Lea & Febiger, 1935, p. 215.

3. White, R. P.: The Dermatogoses, ed. 4, London, H. K. Lewis & Co., Ltd., 1934, p. 264.

and the numerous liquids used for the solution of cellulose can be ample sources of injury to the skin and, of course, to mucous membranes. The processes used in the manufacture of the various synthetic base plates are trade secrets, but judging from what is known about them it is quite likely that at some step in the process a compound is formed or an ingredient is used which might be irritating to the tissues in the mouth of a susceptible person. The cases herewith reported would seem to indicate so, for in none of them could the symptoms be accounted for on the basis of mechanical faults, infections or other medical factors, and, so far as could be determined, irritants such as dentifrices could also be eliminated as etiologic agents.

#### SUMMARY

Three cases of stomatitis followed the use of dental plates. In two of the cases there were strong reactions to patch tests on the skin made with the denture material. The dental plates, synthetic substitutes for vulcanite, are made by processes that are trade secrets, but sufficient is known of their composition to indicate that they can readily irritate susceptible tissues. The stomatitis in these cases is thought to be due to sensitization to the materials in the dental plates.

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### PERINEAL TESTICLE

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Failure of the testicle to reach its proper destination in the scrotum is the commonest important anomaly of the spermatic tract. As a rule the improperly descended testicle is located at some point along the normal course of descent (abdominal, inguinal or high scrotal) but in some instances the organ is ectopic or aberrant. The ectopic gland may be (a) interstitial (lying anterior to the aponeurosis of the external oblique muscle), (b) femoral or crural (lying in Scarpa's triangle), (c) penile (overlying the pubic bone), (d) perineal and (e) transverse (fig. 1). In the last instance the two testes descend through the same inguinal canal. The present discussion concerns only perineal ectopia; three instances recently observed in children are reported.

#### ETIOLOGY

**Incidence.**—Perineal testicular ectopy is an unusual observation. Although the reported incidence of improperly descended testicle varies from 1.02 per cent in 108,000 men<sup>1</sup> to 3 per cent in 14,410 boys under 14 years of age,<sup>2</sup> Burdick and Coley<sup>3</sup> did not encounter a perineal testicle in 537 cases of cryptorchidism. It was not observed in 18,000 autopsies in males whose postmortem records I<sup>4</sup> studied for uropathy. Nor has a case of perineal testicle been seen in more than 36,000 admissions to the urologic service of Bellevue Hospital. On the other hand, Eccles<sup>5</sup> found five cases in 936 undescended testicles; Robertson<sup>6</sup> recently reported an operative case in a 3 months old boy. There are

ninety-nine instances recorded in the literature to date. Curiously, in a moderate size general hospital I saw three cases during a period of twenty months.

**Embryology.**—The mechanism by which the testicle normally migrates from the high intra-abdominal position of early fetal life to the bottom of the scrotum is unknown. The oft repeated conception of downward

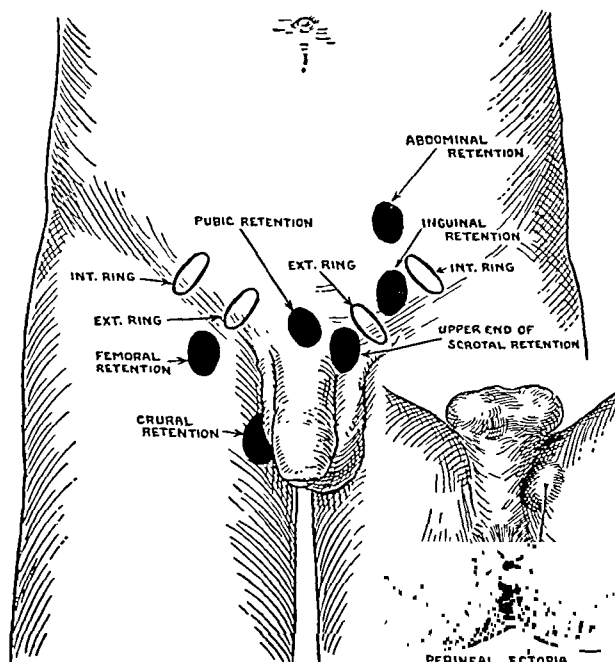


Fig. 1.—Sites of abnormal descent of the testicle.

traction of the testicle by the gubernaculum is still *sub judice* for, as Hunter<sup>7</sup> has shown, the testis of the newborn together with the fascial coverings may be lifted out of the scrotum without tearing anything but a little superficial connective tissue. Lockwood's<sup>8</sup> theory of

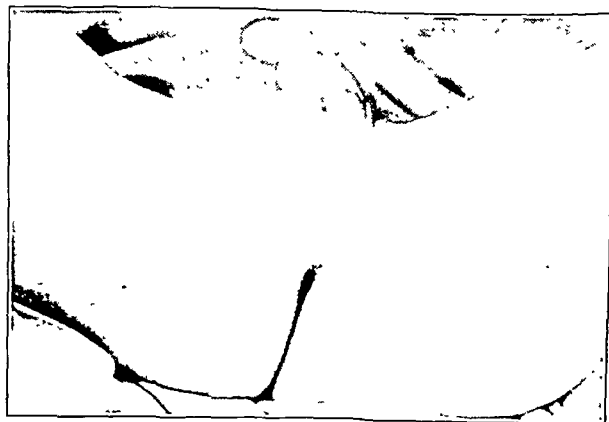


Fig. 2 (case 1).—Left perineal testicle in 11 year old boy. Indwelling catheter in urethra following transurethral resection of congenitally hypertrophic verumontanum.

a multitailed gubernaculum, the tails of which pass from the testicle to the bottom of the scrotum, the pubis (penile), the spine of the ischium (perineal) and Scarpa's triangle (femoral or crural), has been adduced by some to explain testicular ectopy; i. e., the testicle goes in the direction of the strongest pull. Suggestively

7. Hunter, R. H.: Brit. J. Surg. 14: 125 (July) 1926.  
8. Lockwood, H.: Brit. M. J. 1: 444, 1887.

From the Department of Urology, Mountsinde Hospital, Montclair, N. J.

1. Marshall, E.: Edinburgh M. & S. J. 30: 172, 1828.  
2. Coley, W. B.: Ann. Surg. 48: 321, 1908.  
3. Burdick, C. G., and Coley, B. L.: Ann. Surg. 84: 867 (Dec.) 1926.  
4. Campbell, M. F.: Pediatric Urology, to be published.  
5. Eccles, M.: Brit. M. J. 1: 570, 1902; 2: 1314, 1902.  
6. Robertson, Hugn: Ectopia Testis Perinei, J. A. M. A. 95: 191 (July 19) 1930.

commending this theory was the observation in my two operative cases that the strong gubernaculum passed from the lower pole of the testicle to the spine of the ischium and firmly withheld the organ in the perineum. Yet Sønneland<sup>9</sup> discards Lockwood's notion and believes that, once the testicle has descended through the external inguinal ring, the action of the gubernaculum is no more than passive. If the gubernaculum is inadequate or breaks at this point, the testicle descends along the line of least resistance and becomes ectopic. The anomalous descent occurs between the same fascial planes (superficial or Camper's and deep or Scarpa's) that guide urinary extravasation. Some writers believe that a tight scrotal aperture above (the so-called third inguinal ring<sup>10</sup>) may deflect the descending testicle. This observation was striking in both the boys on whom I operated.

#### PATHOLOGY

The perineal testicle is subject to the same unfavorable factors as are organs in inguinal or other forms of maldescent. If the anomalous condition is permitted to persist, atrophy and loss of fertility of the gland are certain. The organ is subjected to ill borne trauma and, according to Dean,<sup>11</sup> the improperly descended testicle is 200 times more likely to become the site of a malignant growth than is a normally descended gland.

#### SYMPTOMS AND DIAGNOSIS

Presence of the testicle in the perineum and its corresponding absence from its normal scrotal position is both the commonest presenting symptom and the diagnostic criterion. The organ may be relatively insensitive (when greatly atrophied) or it may be the site of intermittent or constant dull or acute pain. Epididymitis in a perineal testicle has been reported.<sup>12</sup> By palpation the relative degree of testicular atrophy can be determined by comparison with the normal mate. In any patient with cryptorchidism the perineum should be examined.

Sometimes, as illustrated by cases 1 and 3, the testicular anomaly may be but one of a number of congenital developmental errors. Moreover, it is observed that in about 35 per cent of cases of genital anomaly the upper urinary tract also is anomalous (e. g., case 1).

#### TREATMENT

Treatment is necessarily surgical. There is no preventive treatment. For obvious reasons hormone therapy (pregnancy urine extracts such as antuitrin-S and follutein), which is often so valuable in inguinal and abdominal testicular maldescent, is of no help in perineal or any other form of testicular ectopia. The spermatic cord is long enough, but the gland has descended into the wrong channel and can be properly placed only by surgical methods.

*Time for Operation.*—Unless the ectopic gland is producing symptoms, operation should be withheld until after the third birthday. It is advisable, however, to transplant the testicle to its normal scrotal location soon thereafter, and in all events before the boy starts riding a bicycle or in active play runs the risk of a straddle injury.

*Operation.*—Through an incision from 3 to 4 cm. long, the external inguinal ring and the upper portion of the ectopic spermatic cord are exposed. The incision

begins just above the level of the external ring and extends downward in the scrotofemoral fold toward the ectopic gland. Between the superficial and the deep perineal fascial layers the testicle will often be found firmly anchored by its gubernaculum, perhaps most frequently to the spine of the ischium. The gubernaculum is now divided so that a generous segment remains for suture to the depth of the new scrotal pocket. The cord, which will be found of ample length, is mobilized to the external inguinal ring and is examined for a hernial sac. Yet congenital hernia is not common in perineal testis. The tunica vaginalis is now everted behind the testicle. This prevents traumatic (surgical) hydrocele, which is almost certain to follow if the precautionary eversion is not performed. An adequate pocket is made in the scrotum to receive the testicle. The pocket is turned inside out and to its depths the gubernaculum is stitched with fine chromic gut. Due care must be observed that in transplanting the testicle to the scrotum the cord is free of torsion. The testicle having been properly placed, it is well to close the fascial ring of the upper part of the scrotum with two or three fine chromic sutures to keep the testicle down in the scrotum. In other words, the so-called third inguinal ring is reformed. The wound is now closed without drainage.

In my two operative cases I anchored the gubernaculum with a transfixion ligature of unabsorbable suture, which was then passed out through the bottom of the scrotum. This suture was tied to a small rubber band, to which in turn was tied a suture passed through the skin of the lower inner thigh. These sutures were tied to the interposed rubber band under sufficient tension to cause mild traction to be exerted on the testicle, a maneuver adopted from Cabot's technic in the correction of undescended testicle. In from three to six days the traction suture pulls out, but during this time the testis has become well adherent to the bottom of the scrotum and the cord has been kept at full length.

Should hernia coexist, herniotomy also is performed.

#### REPORT OF CASES

CASE 1.—H. S., aged 11 years, was referred by Dr. Henry Larson of Morristown, N. J., Oct. 6, 1934, because of persistent pyuria, repeated gastro-intestinal disturbances, and failure to gain. A thorough urologic examination at Mountsinle Hospital revealed advanced infected hydronephrosis (*Bacillus coli* and *Staphylococcus aureus*) of the lower half of a reduplicated left kidney; a stricture at the vesical junction of the ureter to the diseased segment was the important accessory cause of the renal pathologic condition. Other discoveries of urologic importance included a congenital stricture (7 F.) of the urethra at the penoscrotal angle, congenital hypertrophy of the verumontanum, spina bifida occulta, six lumbar vertebrae, a residual urine which varied between 5 and 7 ounces (150 and 210 cc.), and a left perineal testicle. The gland felt normal and was situated just to the left of the midperineum (fig. 2). Other physical appearances were normal.

The boy also suffered a curious hematologic anomaly which made it necessary to type fourteen members of his blood group (Moss III) before one was found whose cross agglutination test was negative after thirty minutes. Yet when transfusion was done an almost fatal reaction occurred.

Left ureteroheminephrectomy was performed October 12. In three and a half weeks the boy went home, to return November 13, at which time the left perineal testicle was put in its normal position in the scrotum and the infravesical obstructions were eradicated.

With the patient in the lithotomy position and under nitrous oxide-oxygen anesthesia, the operation described under surgical treatment was carried out. The ectopic spermatic cord was mobilized from the external inguinal ring downward and finally

9. Sønneland, S. G.: *Ann. Surg.* 80: 716 (Nov.) 1924.

10. McGregor, A. L.: *Surg., Gynec. & Obst.* 49: 273 (Sept.) 1929.

11. Dean, A. L., Jr.: Personal communication to the author.

12. Franz, F. W.: *Northwest Med.* 34: 309 (Aug.) 1935.

the testicle was separated from its perineal attachment of the gubernaculum to the spine of the ischium. It was noted that the gubernaculum was unusually well developed and extremely tense. The tunica vaginalis was now incised and everted behind the testicle, where it was held by a fine mattress suture. The testicular mesentery was extremely long and permitted the epididymis to hang freely as a wormlike structure. The operation was then completed according to the previously described technic. The urethra was dilated to 18 F. With my miniature resectoscope and the high tension cutting current the greatly hypertrophied verumontanum was subtotally resected. There was mild bleeding; indwelling catheter drainage (12 F.) was established. Immediate convalescence was uneventful, but on the third day and soon following the removal of the indwelling catheter the patient had a chill, the temperature rose to 105.4 F. and the pulse rate increased from 90 to 154 beats per minute. The catheter was reinserted for two days; the acute reaction subsided within twelve hours. In two days the temperature was normal and on the sixth day the traction suture cut through and released the testicle. The boy returned home eight days after the operation.

Postoperatively the urethra has been periodically dilated and the urine has been sterilized with large doses of methenamine (from 60 to 75 grains [3.8 to 4.8 Gm.] per day) and of ammonium chloride. Of the latter, 200 grains (13 Gm.) a day was necessary in order to obtain the desired urinary acidity of pH 5.5. The urine has been sterile for more than a year and there has been no residual urine. The testicle previously ectopic is now normal in position and to palpation.

This case admirably illustrates the startling number of urogenital anomalies with which an individual may be born. It also indicates how, by multiple step procedures and with the application of modern methods of diagnosis and surgical treatment, many of these congenital handicaps (some of which are potentially fatal) can be eradicated. It is of further interest that during the six months following ureteroheminephrectomy the boy gained 24 pounds (11 Kg.). Repeated gastro-intestinal disturbances and failure to gain had been important symptoms in the past history and obviously resulted from renal toxemia.

CASE 2.—J. B., aged 7 months, admitted to the urologic department of Mountinside Hospital in January 1934, had a perineal testicle on the left side. The boy's history and physical examination were otherwise negative. The ectopic gland was of normal size and was situated in the posterior perineum slightly to the left of the midline. Because of his tender age, operation was deferred. The patient was again seen Sept. 23, 1935, at the age of 24 months. Conditions were the same as on the first examination. A questionable left hernial impulse was obtained.

September 26 the perineal testicle was replaced in the scrotum in a manner identical with that previously described. No hernia was found. The traction suture pulled out on the third day. The boy left the hospital one week after operation and when seen four months later presented a most satisfactory surgical end result.

CASE 3.—S. T., aged 14 years, was seen in the urologic department of Mountinside Hospital, Aug. 29, 1935. The right testicle was undescended at the external inguinal ring, where there was a moderate hernial impulse. The left testicle was found in the midperineum and when palpated appeared to be of normal size. Operation was advised, a Torek procedure to be carried out on the right side and the previously described operation for perineal testicle on the left. Because of parental objection this has not yet been accomplished.

#### SUMMARY

Perineal testicle is an unusual genital anomaly. The embryologic etiology is unknown. Diagnosis is made by inspection and is confirmed by palpation. The treatment is surgical and consists of placing the ectopic organ in a newly made pocket in the scrotum. Unless this is done the ectopic organ is abnormally subjected

to trauma; atrophy and isolateral sterility are almost certain. Endocrine therapy is ineffectual in correcting this variety of maldescent. There should be neither surgical morbidity nor surgical mortality.

140 East Fifty-Fourth Street.

#### THE PRESENT STATUS OF OUR KNOWLEDGE OF HEREDITY AND CANCER

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BAR HARBOR, MAINE

During the past thirty years, evidence derived from biologic experimentation in the laboratory has yielded considerable information concerning the nature of the constitutional or hereditary factors which predispose certain animals to cancer and which make others unlikely to develop it. As long ago as 1907-1910, Tyzzer, J. A. Murray and Bashford had pointed out that, in mice, the progeny of females which developed spontaneously cancer of the breast were more apt to form this type of neoplasm than were animals not so descended. Slye in a long series of papers demonstrated, as did Loeb and Lathrop, that different families and strains of mice showed, in each case, a more or less characteristic degree of cancer function. None of these investigators had available for experimentation strains in which genetic homogeneity had been attained. As a result, the genetic variables that were present prevented an exact test of the nature of the process of transmission from one generation to another of the tendency to form cancer.

The key as to how to obtain strains that were genetically homogenous first became known to geneticists by the work of Johannsen and of Jennings in 1909. It was not, however, until another decade had passed that the production of such homogenous strains became generally recognized as an essential step before the genetics of any such a phenomenon as cancer could be investigated. The process by which genetic uniformity is produced is one of rigid inbreeding of own brother to sister or of progeny to parents. King's well known work with inbred selected strains of rats did much to show that the process could be outstandingly successful and proved the incorrectness of such assertions as that of Slye to the effect that "continued inbreeding eliminates any strain."

Beginning in 1909 I had selected for intensive inbreeding the descendants of a single pair of mice the color of which was dilute brown. This strain has been continued since that date. As time passed other unrelated inbred strains have been developed. In some of these the incidence of cancer of the breast runs as high as from 85 to 100 per cent in breeding females 14 months of age or older. In others cancer of the breast occurs very rarely, perhaps in 0.1 per cent or less. Other types of neoplasm are also obtained in characteristic amount according to the particular strain used.

There are three levels at which the genetics of cancer can be investigated. One of these deals with the genetic behavior of animals in relation to transplants of various tumors which originated spontaneously either within a given strain or in some unrelated strain.

The genetics of susceptibility or nonsusceptibility to transplants of various tumors was successfully worked

out by Bittner, Cloudman, Strong and myself during the period 1914-1936. It has been reviewed by Haldane and by Bittner.

Whether a given animal will grow a certain tumor on transplantation depends on the degree of biologic similarity between the host and the tissue of the tumor used for transplantation. The degree of biologic resemblance is chiefly determined by mendelian genes. The number of genes involved varies in each case, being as low as one in some cases investigated and as high as twelve or fifteen in others. This general conclusion is based on the genetic analysis of more than thirty different spontaneous tumors and on more than 25,000 individual transplantations.

By 1928-1929 there were on hand a sufficient number of inbred strains of mice to make the beginning of work on the genetics of spontaneous tumors seem desirable. Strains high in cancer incidence were crossed with low cancer strains in various ways and the hybrids of different generations were observed for cancer incidence. All animals were examined after death and all suspicious nodules were sectioned and diagnosed.

With the coming to maturity of females that were first generation hybrids between cancer and "non-cancer" strains, a test was provided for Slye's widely publicized hypothesis that the incidence of all spontaneous cancer is due to a single mendelian recessive hereditary factor. The presence of a large number of cases of cancer in the first generation hybrids has definitely disproved this theory, which even on Slye's own data I had shown (1928) to be of extremely doubtful validity.

At the same time (1933-1935) results have been published which establish certain general principles for future guidance. Without detailed consideration of the various publications to which reference will be made, these principles and conclusions may be very briefly summarized as follows:

1. That the genetic constitution of an animal is of prime importance in determining the likelihood of its having cancer of the breast is shown by outcrosses between high and low cancer strains.

If a strain in which the incidence of breast cancer among virgin females is high (approximately 50 per cent) is crossed with a low cancer strain, the amount of breast cancer appearing among virgin females of the first hybrid generation is largely dependent on the strain from which the female ancestor is derived.

Thus if a "high" strain female is crossed with a "low" strain male the incidence of breast cancer in the virgin female hybrids is approximately 39 per cent.

If, on the other hand, a "low" strain female is crossed with a "high" strain male the incidence of breast cancer is only 6 per cent.

This difference holds good for the second hybrid generations as well as for the first, in a large number of animals (over 1,200).

This type of inheritance is nonmendelian and is unique among animals. It follows the maternal line and definitely establishes the existence of genetic influences outside the chromosomes.

2. Studies of a preliminary nature have shown no such unusual behavior of genetic factors underlying the incidence of such tumors as lymphosarcomas. The genetic influences in this case seem to be equally derived from either the male or the female line. This is characteristic of the normal type of mendelian inheritance, which depends on the chromosomes. The distinction

between cancer of the breast and such types as lymphosarcomas thus seems fundamental. As far as the present evidence is concerned there seem to be many genetic factors involved in the spontaneous incidence of sarcomas of various types.

3. Blockage of the nipples on one side of the body resulting in no drainage during lactation seems to make the blocked side a more frequent site of breast cancer among females derived from a high cancer stock. It fails entirely to produce cancer in females derived from a low cancer stock. This is a clear proof of the relative rôles of constitution on the one hand and irritation due to blockage on the other. The former is basic (Green and Fekete).

4. There is some relationship between the amount and function of mammary tissue and its tendency to form a cancer in those inbred strains of mice which are high in cancer incidence. Thus virginity delays the appearance of cancer of the breast and also actually reduces the amount of it appreciably (W. S. Murray).

5. The presence of ovarian secretion is a factor in influencing the amount of mammary development and consequently affects its ability to act as the site of cancerous changes.

6. For this purpose it is not necessary to derive the ovarian secretion from a high cancer strain individual. Thus ovaries from a low cancer strain transplanted in castrated animals of a high cancer tendency, or even injections of theelin in such animals, will allow cancer of the breast to develop in some cases (J. M. Murray, Lacassagne, Little, unpublished data).

7. Absence of testicular secretion caused by castration after 4 weeks of age is not sufficient to allow males that are brothers of females in a high cancer stock to develop cancer of the breast. On the other hand, when such castrated males receive and maintain transplanted ovaries (W. S. Murray) or injections of theelin (Lacassagne) they may develop cancer of the breast.

8. The technic of keeping the genetic constitution constant and varying the ovarian and mammary functions has given sufficient information to make it possible to recognize that the degree and extent of those functions is a factor of the internal environment of the individual which may importantly affect the incidence of breast cancer.

9. The technic of keeping ovarian and mammary function constant and varying the genetic factors has shown that hereditary transmission of constitutional influences plays a basic rôle in the incidence of cancer of the breast.

It may be pointed out in conclusion that the accepted method of making human matings, viz., by uncontrolled outcrossing combined with the inadequate records and small numbers of progeny which commonly are encountered in human families, militates against the practical use of controlled heredity as a means of reducing the incidence of cancer in man. This, however, does not prevent the genetic approach to the problem in the laboratory and the use of controlled homogeneous inbred strains of mice from being extremely favorable material for pure scientific research in the nature and cause of cancer.

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**Signers of the Declaration of Independence.**—Five of the fifty-six signers of the Declaration of Independence and twenty-three members of the Provincial Congress of Massachusetts in 1774-1775 were medical men.—Patterson, R. U.: *Some Important Contributions to Medical Science by Military Surgeons, J. Oklahoma M. A.* 29:157 (May) 1936.

## Clinical Notes, Suggestions and New Instruments

### A CASE OF CONTACT DERMATITIS PRODUCED AT A DISTANCE BY THE SENSITIZING AGENT

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In the classification of skin diseases, contact dermatitis or dermatitis venenata appears as a clinical entity, separate from the more inclusive term eczema. The chief reason advanced for this separation is that in contact dermatitis it is necessary to have actual physical contact between the causative agent and that portion of the skin involved. The case herewith presented demonstrates that contact dermatitis or dermatitis venenata may be produced by a sensitizing agent acting at a distance.

C. M., a man, aged 29, a truck driver, complained of a dermatitis present on the extensor surfaces of both hands and both feet. This had been present for the past six months. The patient stated that one and one-half years before he had had a similar ailment, which lasted for three months and disappeared. He had been driving a truck for six years, but only for the past one and a half years had he noted an eruption. At that time he took a trip into the country and two

bottles. Fifteen minutes later the Ethyl caused itching and burning, and the area of skin covering the open end of the bottle was reddened. Forty-five minutes later X-70 and Renown both showed the same effect. All the involved areas also showed the presence of blisters about six hours after contact with the gasoline. The itching and eruption caused by X-70 and Renown practically disappeared in twenty-four hours. That caused by Ethyl persisted for forty-eight hours. My arm, used as a control, was entirely normal. This reaction could very well explain the eruption on the dorsum of both hands, but could this explain the involvement of both feet? So far as the patient knew, his feet had not been in contact with gasoline. He was advised to discontinue work, and again his skin cleared. When he resumed his former work the lesions reappeared after an interval of three months.

The possibility presented itself that the dermatitis on the back of the feet might be due to a localization there of the excess gasoline absorbed elsewhere.

The following experiment was then performed: Each forearm was exposed daily for forty-five minutes to the vapors given off from the three brands of gasoline he used, and the results are noted in the accompanying table. The first day, fifteen minutes after the application of the ethyl gasoline, an itching and redness was noted on the patient's arm. Forty-five minutes after application all three areas itched to such an

*Experiments with Three Brands of Gasoline Used by Patient*

Applied 45 Minutes Daily for 8 Days, Then Twice Daily	Time Observed	First Days' Observations	Second Through Seventh Days	Eighth Day	Ninth Through Eleventh Days	Twelfth Day	Thirteenth Day
Renown gasoline	15 minutes	Nothing remarkable Redness and itching Redness and itching lessened	Practically the same as first day	Practically the same as the first day except that an eruption appeared in the popliteal areas; general symptoms also developed	Practically the same as eighth day	Eruption over all of healed areas as well as over both legs	Eruption spread over the entire body and general- ized symptoms complained of
	45 minutes						
	5 hours						
X-70 gasoline	6 hours	Blisters appeared Skin practically clear Skin clear	Practically the same as first day	Practically the same as the first day except that an eruption appeared in the popliteal areas; general symptoms also developed	Practically the same as eighth day	Eruption over all of healed areas as well as over both legs	Eruption spread over the entire body and general- ized symptoms complained of
	24 hours						
	48 hours						
Ethyl gasoline	15 minutes	Itching and redness Intense itching and redness	Practically the same as first day	Practically the same as the first day except that an eruption appeared in the popliteal areas; general symptoms also developed	Practically the same as eighth day	Eruption over all of healed areas as well as over both legs	Eruption spread over the entire body and general- ized symptoms complained of
	45 minutes						
	5 hours						
	6 hours	Blisters present					
	24 hours	Blisters and redness					
	48 hours	Blisters and redness Practically clear					

weeks later the eruption on both hands and feet disappeared. It had been present for ten weeks previously. One year before admission he again began to drive a truck and six months later the eruption reappeared on the dorsum of the hands, where it remained for three months and then involved the dorsum of both feet. He complained of itching and burning of the areas involved, which were worse while he was at work or after he worked on his own automobile. Occasionally the entire body would itch and burn, but most of the symptoms were limited to the hands and feet. His past history was negative for any allergic manifestations. His family history revealed that his mother had had hay fever and his father asthma.

Physical examination was not remarkable except for the skin lesions present on the dorsum of both hands and both feet. The eruption was characterized by scales, fissures and marked reddening. There were also some areas oozing a thin watery material.

The urine and blood count were within normal limits, and the blood Wassermann test was negative. Extensive skin tests with the intracutaneous method were all negative. The usual common materials used in the patch tests were also negative.

He was then told to bring a sample of everything he handled while at work. Everything tested was negative. He mentioned that he was in the habit of washing his hands with gasoline when they were very dirty. He was told to bring a sample for the purpose of testing of each kind of gasoline he used. He brought Ethyl, X-70 and Renown gasolines. Each of these was placed in a separate 1 ounce glass container and the flexor surface of his forearm was placed over the openings of these

extent that the patient asked to have the experiment stopped. My forearms used as a control were not involved. Five hours later the redness was followed in another hour by blisters. The lesions caused by X-70 and Renown gasolines practically disappeared after twenty-four hours, while the lesions due to Ethyl gasoline lasted for forty-eight hours. The second day the same procedure was carried out on the other forearm, with practically the same results. This experiment was performed daily with the same results but using different clear spots on alternate arms until the eighth day, when an eruption appeared in the popliteal areas and he complained of "feeling miserable over his entire body" about the same time. He also complained simultaneously of a feeling of fullness in the joints. Nevertheless he asked to have the experiment continued. On the ninth, tenth, eleventh and twelfth days the same procedure was followed, except that the gasoline was applied twice a day instead of once. Until this time I would place the gasoline on alternate arms. When I alternated thus the lesions would disappear (except those caused by Ethyl) when I was again ready to use the same arm. On the twelfth day, however, the healed areas on the two arms erupted simultaneously with those on both legs. One day later, although no more gasoline vapors were contacted, the eruption spread over the entire body. The popliteal areas, the flexor surfaces of the forearms, and the axillae were most extensively involved. Fifteen minutes before the generalized eruption occurred, the patient stated that he felt as though needles were pricking his bones. Within two months the lesions had healed. He was told to avoid contact with gasoline and has been free from symptoms except on two different occasions when he has had definite exposure to gasoline.



This case is reported to demonstrate that it is possible to have a so-called contact dermatitis caused by the responsible agent acting at a distance from the skin area involved. These studies suggest that after repeated exposure to a sensitizing agent the latter can be absorbed and affect other areas of the skin not in direct contact with the offending agent, whereas a smaller quantity may cause only a local lesion.

Doctors Building.

#### TRAUMATIC DELTOID PARALYSIS TREATED BY MUSCLE TRANSPLANTATION

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Flaccid paralysis of the deltoid muscle may result from poliomyelitis, obstetric paralysis or traumatic injury of the circumflex (axillary) nerve. Various operative procedures have been proposed to relieve this severe lesion. Of these the transplantation of the origin of the short head of the biceps from the coracoid process, and the origin of the long head of the triceps from the inferior margin of the glenoid cavity, to the tip of the acromion, as proposed by Dr. Frank Ober,<sup>1</sup> has been the most successful.

The operation was first used to relieve deltoid paralysis resulting from infantile paralysis, but Dr. Ober has since extended its use to those cases resulting from obstetric paralysis. This report is to present a case of deltoid paralysis, caused by a traumatic lesion of the circumflex nerve, in which this operation was successfully used.

#### ANATOMY

The circumflex nerve arises from the posterior cord of the brachial plexus and consists of fibers from the dorsal divisions of the fifth and sixth cervical nerves. It passes downward and outward from behind the third portion of the axillary artery and over the outer border of the subscapularis muscle to enter the quadrilateral space, where it lies beneath the posterior circumflex artery and vein. It then turns about the posterior and external surface of the surgical neck of the humerus to end within the deltoid muscle. The nerve consists of two main bundles, the larger medial funiculus supplying the teres minor and a part of the deltoid, after which it passes under the deltoid and around the lower part of the posterior border to supply the skin over the long head of the triceps and the lower two thirds of the posterior part of the deltoid. The lateral branch supplies the remainder of the deltoid and gives off an articular branch to the shoulder joint.

This exposed position of the circumflex nerve makes it particularly liable to injury. It may be easily torn or compressed in fractures of the surgical neck of the humerus or in dislocations of the shoulder joint, or it may be contused by blows on the shoulder. If paralysis of the circumflex nerve results, loss of motor power to the deltoid and teres minor muscles results in an inability to abduct the arm. Elevation of the arm to a degree less than a right angle may be accomplished by the supraspinatus muscle.<sup>2</sup> There is also a loss of sensation over the cutaneous distribution of the nerve, involving the skin over the long head of the triceps and the lower posterior part of the deltoid.

#### REPORT OF CASE

M. K. K., a student nurse, aged 20 years, has always been very athletic. On the first day of her annual vacation, Aug. 3, 1935, she was in swimming. A diver struck her forcefully on the left shoulder. On the following day the entire left shoulder region was so painful that motion was impossible. Motion gradually came back, and by the time she returned to duty she could abduct the left arm to 80 degrees with the elbow flexed to a right angle. She continued on duty until September 30, when her room-mate noticed that the left shoulder region was markedly flattened. She was seen on the following day and stated that there was a continuous dull ache in the left shoulder and that she did not possess the full use of the arm. Physical examination at that time showed a marked atrophy of the left deltoid, in contrast to the excellent development of the neighboring muscles. This atrophy caused undue prominence of

the acromion and coracoid process. The capsule of the shoulder joint was relaxed three-fourths inch. All motions of the arm except abduction and forward raising were normal. With the elbow extended, she was able to abduct the arm 30 degrees. When the elbow was flexed at this point, the long head of the biceps aided the supraspinatus, and abduction was possible to 80 degrees. Sensory examination showed complete anesthesia over the complete cutaneous distribution of the circumflex nerve. Electrical stimulation showed an absent response of the deltoid muscle to the galvanic current. Neurosurgical consultation was obtained and the diagnosis of a traumatic lesion of the circumflex nerve confirmed. The consultant did not recommend exploration of the nerve. The left arm was placed on a platform splint, holding the shoulder in 90 degrees abduction and 10 degrees forward of the coronal plane. Daily sinusoidal current and diathermy treatments, together with massage and exercises, were begun.

The possibility of muscle transplantation had been discussed with the patient. Toward the latter part of November she requested operation, saying that the shoulder ached continually and that she was afraid that she would not be able to resume training. December 2, four months after the injury, operation was performed. The short head of the biceps and the long head of the triceps were freed subperiosteally from their origins and transplanted into a shark mouth incision osteotomized in the tip of the acromion. At the time of operation, the deltoid and teres minor were found to be completely flaccid. The transplanted muscles were exceptionally large and of excellent quality. Special care was taken in closing the deep fascia. At the conclusion of the operation, the humeral head was quite firmly held in the glenoid cavity. The arm was replaced on the platform splint. On the third postoperative day, the patient stated that the dull dragging sensation in the shoulder had disappeared. Muscle reeducation was begun on the fourteenth postoperative day, at which time the transplants could be felt to contract. The following day, with the arm gently supported, she could raise the arm 10 degrees from the splint, while on the eighteenth postoperative day she could raise it above her head. At the end of six weeks she could raise the arm from her side to above her head or abduct it through the same range. Abduction was possible using each transplant separately, as well as by their combined action.

She returned to light duty at the end of eight weeks, wearing the splint during class hours and at night, and returned to full floor duty at the end of twelve weeks. At the time of this report, it has been seven months from the time of the original injury and fourteen weeks since operation. She has full functional use of the left arm and is performing regular nursing duties in a satisfactory manner. Paralysis of the circumflex nerve is still complete, as evidenced by the undiminished area of skin anesthesia and the absence of reaction of the deltoid to electrical stimulation. On being shown a recent report of a case in which spontaneous recovery of a paralyzed circumflex nerve began after seven months,<sup>3</sup> she remarked that she still was quite satisfied to have had the operation, since she could do all her work and did not have to wear a splint.

#### CONCLUSION

This case is reported as evidence that transplantation of the short head of the biceps and the long head of the triceps to the tip of the acromion is of value when deltoid paralysis results from trauma to the circumflex nerve, as well as in cases resulting from poliomyelitis or obstetric paralysis. The sound mechanical principle underlying this type of operation, as evidenced by ability to abduct the arm by either transplant acting separately, indicates that better function in the other types of deltoid paralysis should be obtained by this operation than by other types of muscle transplants. It is felt that, since a traumatic lesion of the circumflex nerve gives a prolonged disability and an uncertain prognosis, this procedure may be done advantageously in those cases in which time is an important factor and that it offers more hope than exploration of the nerve. If spontaneous recovery should occur, the transplants will prevent undue strain on the deltoid and check any tendency of the capsule to relax.

530 Main Street.

1. Ober, F. R.: An Operation to Relieve Paralysis of the Deltoid Muscle, J. A. M. A. 99:2182 (Dec. 24) 1932.

2. Codman, E. A.: The Shoulder, Boston, Thomas Todd Company, 1934, p. 393.

3. Hirsch, Sidney: Paralysis of the Axillary (Circumflex) Nerve with Spontaneous Recovery After Seven Months, J. A. M. A. 106:705 (Feb. 29) 1936.

# RECURRENCE OF PAROXYSMAL AURICULAR FIBRILLATION AFTER PERMANENT RELIEF OF HYPERTHYROIDISM BY SUBTOTAL THYROIDECTOMY

ERNST P. BOAS, M.D., NEW YORK

This report concerns a patient with hyperthyroidism with established auricular fibrillation before operation, in whom sinus rhythm was restored following the postoperative administration of quinidine. Nineteen months after her thyroidectomy she was operated on for carcinoma of the colon. This operation was performed in three stages. Immediately after two of these operations transient auricular fibrillation developed, which subsided spontaneously after about twelve hours on each occasion. Since that time a year and a half has elapsed and the rhythm has remained regular.

A woman, aged 50, seen June 14, 1932, had had the menopause three years previously. She had been well until about a year previously, when she began to complain of increasing weakness and nervousness. She became excited very readily and noted palpitation and dyspnea on exertion. Two weeks previously during a meal, she suddenly was unable to move her right hand and her speech was altered. These symptoms lasted only a few moments. The following day she vomited. These symptoms did not recur. She had lost 7 pounds (3,175 Gm.) during the previous two months.

On examination the patient was well nourished, weighing 157 pounds (71 Kg.). There was marked tremor of the hands. There were no paralyses and all the reflexes were normal and exaggerated. The eyes were not prominent, and there were no abnormal eye signs. The thyroid isthmus was palpable but did not appear enlarged. There was no substernal thyroid. The lungs were clear. Fluoroscopy revealed moderate enlargement of the left ventricle. The first heart sound was of good quality. There were no murmurs or accentuations. The rhythm of the heart was absolutely irregular, the rate being about 120. The blood pressure was 160 systolic and 80 diastolic. The electrocardiogram revealed left axis deviation, auricular fibrillation and occasional ventricular extrasystoles. The basal metabolic rate was plus 38 per cent.

She was prepared for operation with aqueous solution of iodine and, June 27, subtotal thyroidectomy was performed by Dr. Harold Neuhof. A rather large right lobe, containing a cyst, and a small left lobe were found. The auricular fibrillation persisted and five days after operation she received quinidine sulfate. After 24 grains (1.5 Gm.) of the drug had been administered, sinus rhythm was restored. The heart rate was 64. July 12, auricular fibrillation recurred but was quickly controlled with further dosage of quinidine. Following this the heart remained regular. She lost her nervousness, gained 7 pounds and was free from symptoms. November 3 her basal metabolic rate was minus 9 per cent. Her pulse rate was 54, the rhythm was regular and the blood pressure was 160 systolic, 80 diastolic. She was seen again, Feb. 16, 1934. During the previous six months she had had occasional sticking cramps in the left lower quadrant. Five days previously these cramps became very severe and during this period there had been no bowel movement. A small mass was felt in the left lower quadrant. Roentgen examination of the colon revealed a marked constriction at the junction of the sigmoid and descending colon. There was no recurrence of the hyperthyroidism or of auricular fibrillation. Dr. Leon Ginsburg, performed a Mikulicz operation for carcinoma of the descending colon in three stages. February 17 a cecostomy for intestinal obstruction was performed. This was uneventful. March 5 the second stage of the operation was performed under spinal anesthesia. The operation lasted one hour and forty minutes. At the end of the operation the rhythm of the heart was absolutely irregular and its rate was 136. The irregularity persisted for thirteen hours, when sinus rhythm was reestablished spontaneously. During this period the temperature was normal. There was no recurrence of the irregularity until June 11, when the patient was again operated on under spinal anesthesia for extraperitoneal closure of the colon. Again the operation was followed by a short period of auricular fibrillation, which disappeared spontaneously. The rhythm has remained regular ever since and there have been no cardiovascular symptoms.

Auricular fibrillation is rarely provoked by anesthesia and operation except in patients with hyperthyroidism. Kurtz and

his associates<sup>1</sup> encountered it only once in 113 nonthyroid operations during which the patients were studied electrocardiographically, and that was in a patient with heart disease. Commonly patients with hyperthyroidism with normal cardiac rhythm before operation develop auricular fibrillation during the first two or three days following operation. The immediate increase of basal metabolism following operation has been held responsible for this phenomenon.<sup>2</sup>

Following subtotal thyroidectomy there is a spontaneous reversal to normal sinus rhythm in about 50 per cent of patients with hyperthyroidism and auricular fibrillation, and if quinidine sulfate is given to the remainder only 10 per cent of the whole group maintain their abnormal rhythm.<sup>3</sup> The refractory cases are those with an additional type of heart disease or those in which operation has been incomplete. The irregularity persists, particularly in patients with mitral stenosis.<sup>4</sup> Once normal rhythm has been established, recurrences of auricular fibrillation are rare and are due usually to recurrent hyperthyroidism or to coincident cardiovascular disease.<sup>5</sup>

The occurrence of auricular fibrillation in the course of hyperthyroidism is not a simple result of the action of the excess thyroid secretion on the heart. It is encountered most commonly in older patients with hyperthyroidism and in those who have cardiac enlargement. Several factors must be at play: a structural or chemical alteration of the heart, thyroid intoxication, and increased work of the heart.

Although my patient had a slight hypertension and some left ventricular hypertrophy there was no dilatation of the auricles, and there had never been signs or symptoms of heart failure. Auricular fibrillation in hypertensive heart disease occurs only in the presence of considerable cardiac enlargement and heart failure. Thus the hypertension cannot have caused the irregularity. Nor was there a recurrence of the hyperthyroidism. Apparently, the auricles originally fibrillating in response to a thyrotoxicosis are now so conditioned that they revert to this irregular form of beating following an indifferent stimulus. This case suggests that, even when there has been an apparent cure of hyperthyroidism by subtotal thyroidectomy, an alteration of the metabolic processes of the heart muscle may persist, favoring a recurrence of auricular fibrillation.

1185 Park Avenue.

## A CASE OF STREPTOCOCCIC MENINGITIS WITH RECOVERY

S. W. MARICK, M.D., PITTSBURGH

The subject of recovery from streptococcic meningitis was recently adequately reviewed by Gray.<sup>1</sup> He found sixty-five cases of recovery reported in the literature, to which he added his own case and made a plea for the report of other cases of streptococcic meningitis in which recovery occurred. I am therefore adding the following case:

### REPORT OF CASE

F. U., a woman, aged 28, entered the Montefiore Hospital, Oct. 22, 1935, for a hemorrhoidectomy, which was performed the following morning under spinal anesthesia.

The past history was unimportant, except that two days previously she had fallen and injured the lower part of the back and the buttocks. At the time of the operation the buttocks still looked bruised, but the lower part of the back appeared normal. She also had an old sinus on the neck following removal of tuberculous glands in childhood, which yielded a staphylococcus on microscopic examination.

Fever, excruciating headache, pain in the back of the neck and vomiting developed October 24. The patient continued to vomit until and including the morning of the 27th. Her vomiting was forceful but not typically projectile.

1. Kurtz, C. M.; Bennett, J. H., and Shapiro, H. H.: Electrocardiographic Studies During Surgical Anesthesia, *J. A. M. A.* 106: 434 (Feb. 8) 1936.

2. Ernste, A. C., and Mulvey, B. E.: A Study of Auricular Fibrillation Following Operations for Goiter, *Am. J. M. Sc.* 188: 382 (Sept.) 1934.

3. Barker, P. S.; Bohning, A. L., and Wilson, F. N.: Auricular Fibrillation in Graves' Disease, *Am. Heart J.* 8: 121 (Oct.) 1932.

4. Rosenblum, H. H., and Levine, S. A.: What Happens Eventually to Patients with Hyperthyroidism and Significant Heart Disease Following Subtotal Thyroidectomy, *Am. J. M. Sc.* 185: 219 (Feb.) 1933.

5. Hurxthal, L. M.: Auricular Fibrillation in Patients with Goiter, *Am. J. M. Sc.* 179: 507 (April) 1930.

1. Gray, H. J.: Streptococcic Meningitis, *J. A. M. A.* 105: 92-96 (July 13) 1935.

I saw the patient October 27, at which time she complained of intense headache, pain in the back of the neck and vomiting.

Physical examination revealed rigidity of the neck, contracted pupils that did not react to light and in accommodation, irregular respirations, absence of abdominal reflexes, and a positive Kernig sign on the right.

The hyperesthesia of the lower extremities was so marked that they could barely be touched without the patient squirming. There was also some cyanosis of the fingertips.

A diagnosis of meningitis was made and a lumbar puncture ordered. The fluid from the spinal tap was cloudy, came out under pressure and contained 1,300 cells per cubic centimeter. The differential count showed 95 per cent polymorphonuclear leukocytes. A blood culture done the next day remained sterile.

The temperature rose to 103 F., ranged up to 104 for six days and then started to decline to normal, which level was maintained after six more days.

October 28 the patient complained of photophobia and the next day of double vision. I had started to tap the spinal canal every eight hours, removing only fluid under active pressure, while forcing dextrose solution by mouth, by enteroclysis and by hypodermoclysis. I did not inject the fluids intravenously because I preferred a slower absorption with a slower elimination.

October 29, with the temperature decreasing to 101 F., there was an abatement of all symptoms and the spinal fluid was getting clearer.

October 30 the spinal fluid appeared clear. The patient was subjectively free from complaint except as to vision and could move her neck freely from side to side. There was, however, considerable pain on pressure along the course of the nerves of the lower extremities.

October 31 the headache and rigidity of the neck recurred and the spinal fluid was again turbid. The following day the patient looked very toxic.

November 3 the temperature dropped to normal and after three days more remained at normal. With the drop in fever, the neck rigidity again became less and by the next day all symptoms were gone except for a doubtful Kernig sign on the right side. The spinal fluid was getting clear again.

November 4 the patient slept at long intervals and the spinal fluid was almost clear.

Facial neuralgia developed on the left side November 7, while there was twitching of the muscles of the right side of the face. By the 9th the patient had double vision only when looking to her left, and on the following day it was present only occasionally when her eyes felt tired. At this time she had quite a washed-out appearance.

A laboratory report of the spinal fluid disclosed a nonhemolytic streptococcus which grew poorly on subcultures and hence was of low virulence. Three cultures were done on different days and the same organism was recovered.

The fluid at the first tap was cloudy, then cleared up with an accompanying drop in fever and amelioration of all symptoms, only to become cloudy again with the return of all symptoms. The spinal fluid became clear a second time, when her temperature again dropped to normal, but was not absolutely clear with the last tap. Fibrin was present in the withdrawn fluid on several occasions. The amount withdrawn varied from 20 to 40 cc. The cell count varied from 1,300 to 450 on November 5, when the patient was free from symptoms.

The blood count showed a leukocytosis highest on October 27, when it was 23,400, with 92 per cent neutrophils.

Treatment consisted of spinal drainage every eight hours for the first four days, then twice daily until November 5, on which day only one tap was performed.

As already mentioned, 5 per cent dextrose in saline solution was injected subcutaneously and fluids were forced by mouth, and enteroclysis was also resorted to early in the treatment. On the average, the patient received close to 4 quarts (liters) of fluids daily. Milk, fruit juices, albumin, ice cream and thin gruels were given from the beginning, and as the patient's tongue was usually clean she was at times encouraged to take cooked vegetables. For the pain she received codeine hypodermically, one-half grain (0.03 Gm.) as her condition required, and occasionally whisky.

## COMMENT

The interesting features of this case, aside from the recovery of the patient, were that it followed spinal anesthesia through recently traumatized tissue, and the symptoms in the course of the disease temporarily disappeared together with the clearing up of the spinal fluid, only to return later. It would be interesting to discover whether a remission in the course of meningitis is always accompanied by a clearing up of the spinal fluid.

When the symptoms first disappeared I was inclined to give the spinal drainage credit for the result, but when they recurred it left me in doubt. Yet the repeated drainage may have cleared up first one infected area and then another. I merely drained off enough fluid at certain intervals to keep the spinal pressure down while forcing fluids. No special claims are made for this method of treatment. I used no serums, no intravenous medication and no blood transfusions.

It must also be borne in mind that the organism was of low virulence, which fact might have played a large part in the patient's recovery.

Retan<sup>2</sup> did not find spinal drainage useful in streptococcal meningitis. The method I employed was not, however, the same as Retan's.

The patient was last examined Jan. 11, 1936, and no residuals were found. She stated, however, that since the meningitis a previous tendency to headache and insomnia has become more marked.

3401 Fifth Avenue.

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**Council on Pharmacy and Chemistry**

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**NEW AND NONOFFICIAL REMEDIES**

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

**DEXTROSE** (See New and Nonofficial Remedies, 1935, page 280).

The following dosage forms have been accepted:

*Dextrose 5% in Distilled Water in Filtrair Container:* Each 100 cc. contains dextrose, U. S. P., 5.50 Gm. Marketed in bottles containing 1,000 cc.

Prepared by Hospital Liquids, Inc., Chicago.

*Dextrose 10% in Distilled Water in Filtrair Container:* Each 100 cc. contains dextrose, U. S. P., 11.0 Gm. Marketed in bottles containing 1,000 cc.

Prepared by Hospital Liquids, Inc., Chicago.

*Dextrose 25% in Distilled Water in Filtrair Container:* Each 100 cc. contains dextrose, U. S. P., 27.5 Gm. Marketed in bottles containing 1,000 cc.

Prepared by Hospital Liquids, Inc., Chicago.

*Dextrose 5% in Physiologic Sodium Chloride Solution in Filtrair Container:* Each 100 cc. contains dextrose, U. S. P., 5.50 Gm. and sodium chloride, U. S. P., 0.85 Gm. Marketed in bottles containing 1,000 cc.

Prepared by Hospital Liquids, Inc., Chicago.

*Dextrose 10% in Physiologic Sodium Chloride Solution in Filtrair Container:* Each 100 cc. contains dextrose, U. S. P., 11.0 Gm. and sodium chloride, U. S. P., 0.85 Gm. Marketed in bottles containing 1,000 cc.

Prepared by Hospital Liquids, Inc., Chicago.

**METRAZOL** (See New and Nonofficial Remedies, 1935, p. 322).

The following dosage form has been accepted:

*Hypodermic Tablets Metrazol 1½ grains:* Each tablet contains metrazol sufficient to insure the administration of 1½ grains of metrazol in solution.

**SAL ETHYL CARBONATE** (See New and Nonofficial Remedies, 1935, p. 358).

The following dosage form has been accepted:

*Compressed Tablets Sal-Ethyl Carbonate with Phenacetin:* Each tablet contains sal-ethyl carbonate 0.23 Gm. (3½ grains) and phenacetin (acetophenetidin-U. S. P.) 0.1 Gm. (1½ grains).

**TETANUS TOXOID, ALUM PRECIPITATED** (See THE JOURNAL, May 16, 1936, p. 1735).

Lederle Laboratories, Inc., Pearl River, N. Y.

*Refined Alum Precipitated Tetanus Toxoid-Lederle.*—Marketed in packages of two 1 cc. vials (one complete immunization); and in packages of one 10 cc. vial (five complete immunizations).

2. Retan, G. M.: The Development of the Therapeutic Use of Forced Perivascular (Spinal) Drainage, J. A. M. A. 105: 1333-1339 (Oct. 26) 1935.

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SATURDAY, JUNE 27, 1936

## URINARY HISTIDINE IN THE DIAGNOSIS OF PREGNANCY

The early clinical diagnosis of pregnancy was greatly aided by the introduction of a laboratory test devised by Zondek and Aschheim in 1928. This test is based on an observation made in 1922 by Long and Evans, who demonstrated that intraperitoneal injections of fresh extract of the anterior lobe of the pituitary body caused an increase in weight of the ovaries of immature rats. Furthermore, large numbers of corpora lutea were formed in these ovaries. A short time later it was clearly established that the anterior pituitary exerted a powerful stimulant effect on the process of lutein cell formation.

Using these fundamental observations of Long and Evans and having demonstrated the presence of large amounts of gonadotropic substance in the urine of pregnant women, Zondek and Aschheim elaborated a technic for the diagnosis of pregnancy, basing their procedure on the detection of gonadotropic substance in the urine. The test involves the injection of portions of urine, over a period of forty-eight hours, into a group of infantile mice and a study of the ovaries of the injected animals at a definite time following the last injection. The ovaries are examined for ripening of follicles, for hemorrhagic points and for the formation of corpora lutea atretica. Utilizing this technic, Zondek and Aschheim found positive results in 98 per cent of the pregnancy cases tested. This test has yielded rather uniformly correct results in other laboratories and has been widely used in the clinical diagnosis of pregnancy. The Zondek-Aschheim test does have, however, the unfortunate feature of involving a considerable number of animals and of being relatively time consuming. Furthermore, the procedure is obviously best adapted to an adequate clinical laboratory and is of little aid to the practicing physician. In view of these difficulties, efforts have been made from time to time to develop a simple chemical test which might perhaps be carried out by the practitioner himself and which does not involve the use of animals.

One of the more promising of these devices appears to be the detection of urinary histidine, an amino acid which has been reported by Voge<sup>1</sup> to be absent from normal urine and present early in the urine of pregnancy. It is quite simple to conduct a chemical test for histidine, as this amino acid in solution gives, under definite conditions, a pink coloration on the addition of dilute bromine water. Voge has applied this test to a large number of urines and has compared the results obtained with those yielded by the application of the Zondek-Aschheim test to the same urines. The high degree of correlation between the results of the two methods has led to the suggestion that the bromine water test for histidine is of considerable aid in the diagnosis of pregnancy. This suggestion was supported by an actual isolation of histidine from pregnancy urine<sup>2</sup> and the demonstration that it was the presence of this amino acid in gravid urines that accounted for the positive bromine water reaction.

Several other investigators have been able to demonstrate a positive histidine test rather uniformly for pregnancy urine, and although the correlation with the Zondek-Aschheim test is not as good as that observed by Voge, the general uniformity of the results has indicated the value of a detailed study of the reaction. This has been initiated by Kapeller-Adler,<sup>3</sup> who, with collaborators, has had experience with the amino acid histidine. These Vienna investigators have applied a quantitative method, developed in their laboratory, to the determination of urinary histidine. It has been demonstrated that pregnancy urine may contain from 6 to 74 mg. per hundred cubic centimeters of this amino acid and that the compound is absent in the urine of normal men and women and in the various pathologic urines tested. In later investigations, these workers<sup>4</sup> have followed the excretion of histidine by a pregnant woman throughout the course of the pregnancy. The amino acid appeared in the urine at about the fifth week of gestation. The amount of urinary histidine was significantly greater on a meat diet, and orally administered histidine was eliminated unchanged. The excretion of this compound ceased on the third day post partum, and histidine given to the same individual several months later was completely metabolized. The authors present experiments which, they believe, support the hypothesis of an inhibition of the activity of liver histidinase in the liver of pregnant women; the failure of this enzyme to catalyze the catabolism of histidine would account for the presence of this amino acid in the urine.

These interesting results merit consideration, in view of the readiness with which the bromine water test can

1. Voge, C. I. B.: *Brit. M. J.* 2: 829 (Nov. 2) 1929; *Proc. Roy. Soc. Med.* 23: 638 (March) 1930.

2. Armstrong, A. R., and Walker, Ernest: *Biochem. J.* 26: 143 (No. 1) 1932.

3. Kapeller-Adler, Regina: *Biochem. Ztschr.* 264: 131 (Aug.) 1933.

4. Kapeller-Adler, Regina, and Schiller, W.: *Klin. Wchnschr.* 14: 1790 (Dec. 7) 1935. Kapeller-Adler, Regina, and Haas, Fritz: *Biochem. Ztschr.* 280: 232 (Sept.) 1935.

be conducted. However, a recent investigator<sup>5</sup> has cautioned against enthusiastic interpretation of the results obtained by the application of the histidine test for pregnancy. With a slightly modified bromine test it has been confirmed that the test for histidine is seldom positive in nonpregnant women. However, although frequently positive in urines from pregnant women, the significant number of negative tests on such urines makes the value of the reaction as a pregnancy test somewhat questionable. There appears to be a relationship between the likelihood of a positive reaction for histidine and the specific gravity of the urine, the intensity of the test varying directly with the magnitude of the specific gravity values. This relationship may merely be a manifestation of a limit to the concentration of urinary histidine that can be detected by the test. Further data must be secured in order to determine definitely whether this relatively simple chemical test for urinary histidine may be of at least some value in the clinical diagnosis of pregnancy. The ease with which the test is conducted should encourage thorough investigations of its value and significance.

#### HEMOLYTIC SHOCK AFTER BLOOD TRANSFUSION

The problem of hemolytic shock is assuming a greater theoretical and practical significance because of the wider adaptation of blood transfusion. Interesting clinical and experimental observations are analyzed by E. P. Gesse<sup>1</sup> in a review of twenty-two papers emanating from the First Surgical Clinic and the Research Institute for Blood Transfusion in Leningrad (E. P. Gesse, chief). According to Gesse and his co-workers, hemolytic shock is a complex concept of manifestations on the part of the blood vessels and the heart, accompanied by a depression of the nervous system and caused by transfusion of incompatible blood. They were able to demonstrate in animal experiments that<sup>2</sup> depressor substances released from the broken down erythrocytes act directly on the blood vessel wall, causing arterial spasm, dilatation of the capillary bed, stasis and a sharp fall in the blood pressure. The cardiac action is secondarily affected as the result of insufficient flow of blood to the heart during the diastole. The manifestations are, as a rule, quickly compensated and are succeeded by a secondary phase provoked by the spasm of the renal arteries and the hemolysis. Derangement of the renal function ensues as the result of toxic action of the products of broken down red cells.

Gesse was able to collect 217 cases of hemolytic shock following blood transfusion. These were recorded in the literature and in replies to 1,700 questionnaires sent out to large hospitals and clinics. In his own series of

2,360 transfusions there were six instances of hemolytic shock (0.25 per cent). The mortality rate for the collected group amounted to 56 per cent. Hemolysis occurred occasionally after transfusion of compatible, conserved blood. It was due either to the hemolysis of the conserved blood, to its being overheated, or to the denatured albumins. The older the blood the greater was the danger of hemolysis.

Excruciating pain in the lumbar region is the most characteristic, in fact, the pathognomonic subjective symptom of hemolytic shock. It is caused by the spasm of the renal arteries, is ischemic in nature and cannot be controlled by morphine. The most important objective signs are the fall in the blood pressure and the increased intestinal peristalsis. Gesse suggests a classification of cases into an acute form with mild and with severe manifestations, and a delayed form. Hemolytic shock results, as a rule, from transfusion of a large amount of incompatible blood. Cases, however, were reported in which fatal shock followed the transfusion of small doses. In forty-six cases, shock developed after transfusion of blood from a universal donor. Possibility of hemolysis is to be kept in mind when amounts larger than 200 cc. of blood from a universal donor are to be used, when the recipient exhibits a severe anemia, and in the presence of a high serum titer of the donor with regard to the recipient's erythrocytes.

A satisfactory method of dealing with the hemolytic shock of blood transfusion did not exist prior to 1932. Intravenous administration of dextrose exerted in some cases a powerful diuretic effect. Decapsulation of the kidneys did not prove successful. In 1932 Filatov and Gesse<sup>3</sup> suggested the method of secondary transfusion with compatible blood as the method of treatment of hemolytic shock. The authors transfused dogs with fatal doses of hemolyzed blood, causing a maximal fall in the blood pressure and cessation of respiration. Transfusion with compatible homogeneous blood revived the animals. The method was applied in human beings in sixteen instances with fourteen recoveries. The secondary transfusion should be performed at the earliest possible moment after the development of hemolytic shock. The method, however, was successful in four cases in which secondary transfusion with compatible blood was undertaken from twenty-four to forty-eight hours after the onset of the symptoms. Amounts of from 200 to 300 cc. of compatible blood are sufficient for the purpose of detoxication, although the arterial spasm is relaxed after the infusion of from 25 to 30 cc., as evidenced by the prompt cessation of the excruciating lumbar pain. Large amounts are contraindicated in the presence of a renal lesion. When hemoglobinuria and anuria are present, the intravenous administration of dextrose is indicated.

5. Földes, Franz: *Biochem. Ztschr* **283**: 199 (Jan.) 1935.

1. Gesse, E. P.: The Nature and the Treatment of Hemolytic Shock After Blood Transfusion, *Vestnik Khirurgii* **41**: 59 (No. 114).

2. Gesse, E. P., and Filatov, A. N.: Experimental Studies on Alterations in Organism in Hemolysis, *Vestnik Khirurgii*, 1932, pp. 80-81; *Ztschr. f. d. ges. exper. Med.* **86**: 211 (Jan. 2) 1933.

3. Gesse, E. P., and Filatov, A. N.: Neue praktische Aushlicks auf die Möglichkeit der Behandlung des hämolytischen Schocks bei der Bluttransfusion im Lichte experimenteller Forschung, *Zentralbl. f. Chir.* **59**: 2674 (Nov. 5) 1932.

### SEPTICEMIA DUE TO ANAEROBIC ORGANISMS

In 1935 Pham-Huu-Chi,<sup>1</sup> according to Lemierre,<sup>2</sup> published a heavily documented monograph on certain septicemias due to anaerobic organisms. This work, being a special thesis, is difficult to obtain; fortunately a brief summary now exists in English in an address by Lemierre.<sup>2</sup> Several species of anaerobic organisms, specifically distinct from one another but possessing the common character of living as saprophytes in the natural cavities of the human body, can cause these special septicemias. All these organisms are fragile, are slightly motile, and grow only sparsely on culture mediums. To this group of organisms belong those gram-negative and non-spore bearing bacilli which certain bacteriologists group together under the name of *Bacteroides*. With them must also be placed several gram-positive anaerobic streptococci and staphylococci, which have been variously named.

A septicemia with these organisms arises from inflammatory or suppurative lesions in the tissues or cavities where the organisms normally exist under physiologic conditions. The most common locations for these inflammatory lesions are the nasopharynx, particularly tonsillar and peritonsillar abscesses, similar regions of the mouth and jaws, the urinary passages and the structures involved in otitis media or mastoiditis, purulent endometritis following parturition, and appendicitis. Whatever the origin, according to Lemierre, the inflammatory lesions present certain common clinical aspects that enable them to be grouped together. The postanginal septicemias due to anaerobic organisms most frequently seen in Paris are due particularly to *Bacillus funduliformis*, which can usually be isolated in pure culture from the blood and from secondary abscesses. The bacillus is sometimes associated with an anaerobic streptococcus.

Clinically the disease usually affects young adults or adolescents, and the two sexes about equally. It has been believed since 1919 that these septicemias are the result of a thrombophlebitis of the tonsillar and peritonsillar veins, which can spread to the internal jugular vein or even to the facial vein. Lemierre agrees with this opinion. The first symptom is a notable rise of temperature to 103 F., often with rigors. There is usually painful swelling of the glands below the maxillary angle, generally unilateral. Most of the septicemias are accompanied by the formation of distant metastatic abscesses. The abscesses are commonly located in the lungs and may occur quite early. They are septic infarcts, leading almost invariably to multiple abscess formation with intense thoracic pain, dyspnea, sometimes blood-stained sputum, pleural frictions, and localized areas of subcrepitant râles. Articulation

lesions are frequent. Icterus has often been noted. Renal lesions, thyroid lesions and metastatic lesions almost everywhere have sometimes occurred. Fatal progress may occur rapidly. The final diagnosis is established by bacteriologic examination. *Bacillus funduliformis* is easy to discover in the purulent effusions, but blood culture on anaerobic mediums gives the earliest definite information. Positive results are particularly easy if the blood is taken during a chill. The treatment has been discussed elsewhere by Lemierre and Pham.<sup>3</sup> Intravenous injection of acridine yellow and blood transfusions have not seemed to influence the course. Furthermore, great hopes cannot be founded on specific serotherapy, since attempts to immunize animals have resulted in poor antibody production. At present the medical treatment must remain purely symptomatic.

There is a definite similarity between the anaerobic septicemias arising from the other organs of the body. Frequently *Bacillus funduliformis* is also a saprophyte in the pelvic organs, the appendix or the ear. Hence localized inflammations in these organs may also result in anaerobic septicemia. Septicemias with other anaerobic organisms, such as *B. fragilis*, *B. radiiformis*, *B. ramosus*, *B. fusiformis* and *B. symbiophiles*, have also been described. The apparent rarity of the disease in this country may cease with a more frequent recognition of the possibility of septicemias being due to organisms of this group.

### Current Comment

#### PRESSURE IN COMMON DUCT AND RELIEF OF PAIN FOLLOWING CHOLECYSTECTOMY

Elsewhere in this issue<sup>1</sup> are probably the first two reports published of direct observations and measurements of pressure in the common bile duct of man. The observations reported by Kipp were made on a man with a benign stricture of the common duct at the ampulla of Vater on whom he had performed a cholecystogastrostomy. Kipp also demonstrated clinically that certain extrinsic factors influenced the flow of bile in this patient. McGowan, Butsch and Walters made their observations on patients on whom a cholecystectomy had been performed. Many years ago Judd and Mann<sup>2</sup> demonstrated experimentally the dilatation of the common bile duct that follows removal of the gallbladder. Nearly ten years later Potter and Mann<sup>3</sup> measured in the laboratory the increase in intraductal pressure following removal of the gallbladder. Now, McGowan, Butsch and Walters,<sup>1</sup> with the cooperation

3. Lemierre, A., and Pham-Huu-Chi: Les septicémies à *Bacillus funduliformis*, *J. de méd. et chir. prat.* **106**:153 (March 10) 1935.

1. Kipp, H. A.: Observations on the Variations in Bile Pressure in the Human Biliary Tract, this issue, p. 2223. McGowan, J. M.; Butsch, W. L., and Walters, Waltman: Pressure in the Common Bile Duct of Man: Its Relation to Pain Following Cholecystectomy, this issue, p. 2227.

2. Judd, E. S., and Mann, F. C.: The Effects of Removal of the Gallbladder: An Experimental Study, *Surg., Gynec. & Obst.* **24**:437 (April) 1917.

3. Potter, J. C., and Mann, F. C.: Pressure Changes in the Biliary Tract, *Am. J. M. Sc.* **171**:202 (Feb.) 1926.

1. Pham-Huu-Chi: Les septicémies dues au *Bacillus funduliformis*, Thèse de Paris, 1935.

2. Lemierre, A.: On Certain Septicemias Due to Anaerobic Organisms, *Lancet* **1**:701 (March 28) 1936.



of patients, have not only shown that what is true of intraductal pressure of animals also is true of intraductal pressure of man but they have demonstrated that morphine, the therapeutic standby for postcholecystectomy colic, actually makes worse the condition that causes the pain. Of course, the pain disappears following administration of morphine just as it would if a black-jack had been employed; the sensory part of the brain ceases to function but the intraductal pressure rises. With the administration of a nitrite, pressure within the common bile duct drops and pain ceases. Now, therefore, the results of the long research become applicable in the everyday work of the physician. This applicability in itself is sufficiently important. However, it illustrates again the interdependence of the sciences and of the medical specialties. Surgeons, in these reports from the bedside, have contributed to drug therapy and pointed out new paths of investigation for the pharmacologists, one of which is to determine whether biliary colic after administration of morphine is attributable to malfunction of the sphincter of Oddi or to closure of the intraduodenal portion of the common bile duct consequent on increased duodenal peristalsis.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

### ARIZONA

**Personal.**—Dr. Willis D. Gilmore, Tombstone, has been appointed tuberculosis consultant for the Arizona State Board of Health.—Dr. Jack B. Eason, Tucson, health officer of Pima County, has been placed in charge of the new health unit in Yuma County.

### CALIFORNIA

**Society News.**—Dr. Clifford V. Mason, Livermore, among others, addressed the Alameda County Medical Association in Oakland, June 15, on "Pneumoperitoneum in the Treatment of Pulmonary Tuberculosis."—Dr. Frederick Proescher, San Jose, addressed the Los Angeles Society of Neurology and Psychiatry, June 17, on "The Nature of the Neurotropic Viruses, Rabies and Poliomyelitis."—At a meeting of the Hollywood Academy of Medicine, May 21, Aberdeen O. Bowden, Ph.D., Los Angeles, discussed "Early Medicine and Its Relation to Magic and Religion."

**Tuberculosis Death Rate Lowered.**—There were 4,516 deaths from tuberculosis registered in California in 1935 as compared with 4,611 deaths in 1934, giving rates of 72 and 74.9, respectively, per hundred thousand of population. Of the 4,516 persons, 3,179 had lived within the state for ten years or more, 576 had lived in California from five to nine years, 357 from one to four years, and 186 had lived in the state for less than one year. Of this group, 4,105 deaths were attributed to tuberculosis of the lungs, 131 to tuberculosis of the meninges and 103 to disseminated tuberculosis.

### CONNECTICUT

**Anniversary of Health Bulletin.**—The *Connecticut Health Bulletin* celebrated its fiftieth anniversary with the May issue. The bulletin reproduces various covers and pages from its earlier issues. The first number of the bulletin appeared in June 1887 and it has been printed continuously since that time.

**Expansion of Health Department.**—Federal funds granted under the Social Security Act have made possible two new positions in the Connecticut State Health Department, it is reported. Franklin M. Erlenbach, Boston, will fill the newly created position of chief of the division of mouth hygiene in the bureau of child hygiene, and Mrs. Helen S. Peterson, New

York, the new position of assistant mental hygienist in the bureau of mental hygiene. Under the new arrangement Miss Anna Katherine Tobias, formerly of West Hartford, has been named librarian of the department. Dr. Henry P. Talbot, who has been studying for the past year at the Harvard School of Public Health, was to return June 1 as director of the bureau of venereal diseases; he was on leave of absence. Dr. Alfred L. Burgdorf, acting director of the bureau, will be transferred to the bureau of preventable diseases.

### FLORIDA

**New Health Units.**—The Gadsden County Health Department was recently organized with headquarters in Quincy. Dr. Charles W. McDonald, formerly director of county health work, Alabama State Department of Health, it is reported, is in charge of the new unit. Dr. Herbert A. McClure is health officer of the newly created health department in Taylor County, with headquarters in Perry.

### ILLINOIS

**Outbreak of Smallpox.**—According to the state department of health, seventeen new cases of smallpox were reported in Will County during the week ended June 1. Three cases were reported in Whiteside County. The twenty new cases during this week compare with four for the corresponding week last year, while 251 cases have been reported for this year against thirty-six for the similar period of 1935.

**Society News.**—Dr. Winston H. Tucker, Springfield, addressed the thirty-seventh annual meeting of the Sangamon County Medical Society in Springfield, June 4, on "Diagnosis and Treatment of Poliomyelitis."—Dr. George D. Hauberg, Moline, was chosen president of the Iowa-Illinois Medical Association at its annual meeting in Davenport, May 26.—Dr. Richard H. Jaffé, Chicago, discussed "Precancerous Lesions" before the Peoria City Medical Society, June 16.

### Chicago

**Personal.**—Dr. Walter W. Hamburger, whose resignation as assistant clinical professor of medicine at Rush Medical College was recently announced, will remain at the Department of Medicine, University of Chicago, as clinical professor of medicine.

**Dr. Meek Gives Luckhardt Lecture.**—Walter J. Meek, Ph.D., department of physiology, University of Wisconsin School of Medicine, Madison, delivered the third annual lecture under the Arno B. Luckhardt Lectureship at the University of Chicago, May 21. His lecture was entitled "A Present Day Concept of Shock." The lectureship was established in the medical school by the Delta chapter of Phi Beta Pi.

**Amateur Night and Annual Banquet.**—The annual banquet of the Chicago Medical Society with the installation of officers took place June 17. Dr. Julius H. Hess, retiring president, made a brief address and installed Dr. Thomas P. Foley as president. The president-elect is Dr. George W. Post. On behalf of the society Dr. Charles H. Phifer presented Dr. Hess with a fine camera. The entertainment included an amateur night at which all the performers were either physicians or members of the families of physicians.

**Rush Medical College of the University of Chicago.**—At the annual faculty alumni dinner at Rush Medical College, June 16, announcement was made by Vice President Fred-eric Woodward for the university that the School of Medicine of the Division of Biological Sciences at the University of Chicago and Rush Medical College are now combined in one institution to be known as the Rush Medical College of the University of Chicago. Undergraduate medical education will be continued at the west side school. The medical schools are united in one departmental organization under the dean of the biological sciences. On the west side Dr. Emmet B. Bay will be associate dean. It is proposed within the next five years to diminish the number of medical students greatly and to introduce graduate instruction on an increasing scale into the curriculum with the possibility that eventually graduate study will supersede undergraduate study entirely on the west side. An ovation was tendered to Dr. Ernest E. Irons, who retires as dean to assume the title of professor of medicine. He will remain as chairman of the department of medicine. In his address Dr. Irons pointed out that 1937 will mark the centennial of the charter of Rush Medical College and it is proposed to celebrate the occasion fittingly at the time of the 1937 convocation. A committee was appointed to draw up plans for the celebration of the centennial with Dr. Robert H. Herbst as chairman.

## INDIANA

**University News.**—An anonymous donor has given a collection of medical memorabilia to the museum of Indiana University School of Medicine, Indianapolis. The collection includes a volume of original notes made by Dr. Robert Cravens of Madison when attending lectures given, among others, by Dr. Caspar Wistar, who published the first American "System of Anatomy"; on materia medica by Dr. Nathaniel Chapman; on surgery by Dr. Physick and Dr. Dorsey, and on midwifery and the diseases of women and children by Dr. Thomas Chalfley James. Original signatures of the lecturers are included in the collection. Dr. Cravens died in 1821.

**District Meetings.**—At a meeting of the Eleventh Indiana Councilor District Medical Association in Marion, May 20, Drs. Andrew L. Banyai, Wauwatosa, Wis., spoke on "Childhood Tuberculosis"; Lall G. Montgomery, Muncie, "Primitive Tubercle"; Arthur B. Richter, Flora, "Treatment of Nephritis," and James Charbonnier, B.D., Upland, head of the department of theology and classical languages of Taylor University, "Present European Situation."—The Ninth Councilor District Medical Society was addressed in Lafayette, May 19, by Drs. Frederick A. Collier, Ann Arbor, "The Acute Abdomen"; Jerome R. Head, Chicago, "Treatment of Acute and Chronic Empyema"; William H. Park, New York, "Management and Control of the Communicable Diseases," and Robert J. Masters, Indianapolis, "The Ophthalmoscope as a Help in Diagnosis of Disease."—At a meeting of the Union District Medical Association in Newcastle, May 28, Mr. Albert Stump, Indianapolis, discussed "The Doctor and the Law"; Drs. Max M. Zinninger, Cincinnati, "Treatment of Acute Head Injuries"; Larue D. Carter, Indianapolis, "The Neuroses"; Charles J. McIntyre, Indianapolis, "Observation in Tuberculosis," and George Wiggins, Newcastle, "Industrial Dermatitis."—The Sixth District Medical Society was addressed in Shelbyville, May 21, by Drs. Joseph L. Allen, Greenfield, who gave the address of welcome; Johnson McGuire, Cincinnati, "Cardiac Irregularities and Treatment"; Louis H. Segar, Indianapolis, pediatrics; Homer H. Wheeler, Indianapolis, "Rectal Diseases Most Frequently Encountered in Practice"; Howard B. Mettel, Indianapolis, "Relation of Indiana Bureau of Maternal and Child Health to Local Medical Society," and Bayard G. Keeney, Shelbyville, cancer.

## LOUISIANA

**Personal.**—Dr. Hilliard E. Miller, assistant professor of gynecology, Tulane University of Louisiana School of Medicine, New Orleans, has been appointed chief of the department of gynecology at Toussaint Infirmary, succeeding his brother, the late Dr. Charles Jefferson Miller.

**Society News.**—At a meeting of the Orleans Parish Medical Society in New Orleans, May 25, speakers were Drs. James Ross Veal and Benjamin D. D. Van Werden on "Post-operative Pulmonary Complications"; Manuel Gardberg, "Diabetic Infection and Gangrene," and Henry Theodore Simon, "Role of the Semilunar Cartilage in the Football Knee." At a special meeting of the society, April 20, Drs. Horton R. Casparis, Nashville, Tenn., discussed "Child Tuberculosis"; Max Pinner, Oneonta, N. Y., "Diagnostic and Prognostic Significance of Negative Sputum"; Paul P. McCain, Sanatorium, N. C., "Epidemiologic Aspects of Tuberculosis," and Lewis J. Moorman, Oklahoma City, "Compression Therapy."

## MAINE

**Society News.**—At a meeting of the Kennebec County Medical Association in Togus recently the speakers included Drs. Hanson T. Perkins, on "Diagnosis of Myocarditis"; James H. Pennington, "Report of a Series of Cases of Chronic Appendicitis"; Joseph E. Wheeler, "Amputations," and Harry Levine, "Nephritides."

## MICHIGAN

**Personal.**—Dr. George P. Myers, Detroit, has been appointed chief surgeon of the Michigan Central Railroad and acting medical director of the New York Central system, succeeding the late Dr. William L. Hartman.

**County Societies and Medical Economics.**—To aid in the adoption of a statewide program of medical economics the chairman of the medical economics committee of the state medical society has sent a letter to the officers of every county medical society urging a survey of this subject in their territory. The committee desires to know what the societies have done during the past twelve months and what they hope to accomplish in the next year.

**Society News.**—Dr. Frederick G. Buesser, Detroit, discussed "Medical Treatment of Peptic Ulcer" before the Lapeer County Medical Society recently.—The St. Clair County Medical Society was addressed, May 19, on "Practical Value of Intravenous Urography."—Dr. Alfred H. Whittaker, Detroit, was elected president of the Michigan Industrial Physicians and Surgeons' Association at its annual meeting in Jackson, May 8; Dr. Donald F. Kudner was reelected secretary and Detroit was selected as the place for the 1937 meeting.

## MINNESOTA

**Society News.**—Dr. John Richards Aurelius, St. Paul, was chosen president of the Minnesota Radiological Society at its recent annual meeting; Dr. Walter H. Ude, Minneapolis, vice president, and Dr. Leo G. Rigler, Minneapolis, secretary. Dr. Willis F. Manges, Philadelphia, discussed "The Future of Radiology" at the annual dinner.—Dr. Thomas B. Cooley, Detroit, addressed the Northwestern Pediatric Society in St. Paul, May 7, on "Constitutional Hemolytic Anemias."—At the annual dinner of the Red River Valley Society in Crookston recently Dr. William T. Peyton, Minneapolis, spoke on "Tumor of the Breast."

**Personal.**—Dr. James R. Kingston, Deer River, has been appointed director of public health for the northern Minnesota district, with headquarters in Grand Rapids; he will share his practice in Deer River with another physician.—Dr. Arrah B. Everts, senior assistant physician, Rochester State Hospital, resigned June 1. She was presented with a gift of silver, May 15, by the employees of the hospital, with which she had been associated since 1918.—Dr. Charles E. Lyght, assistant professor of medicine and acting chief of student health, University of Wisconsin Medical School, Madison, has been appointed professor of health and director of physical education for men at Carleton College, Northfield.

## MISSOURI

**Society News.**—Dr. Thomas G. Orr, Kansas City, addressed the Buchanan County Medical Society in St. Joseph, June 3, on "Treatment of Disease of the Gall Tract."—Dr. Arthur E. Hertzler, Halstead, Kan., addressed the St. Louis County Medical Society, June 24, on "Effects of Total Thyroidectomy with Differentiation Between the Degenerative Toxicity and the Hyperplastic Toxicity"; the St. Louis Medical Society was invited.—Dr. Edmund Henry M. Lissack, Concordia, read a paper on "Breach Presentation" before the Johnson County Medical Society, May 13.

## NEW YORK

**Syracuse Alumni Meeting.**—The Medical Alumni Association of Syracuse University School of Medicine held its annual meeting June 1-2. Demonstrations were presented at the University Hospital of the Good Shepherd, St. Joseph's and Syracuse Memorial hospitals. Dr. Anton J. Carlson, professor and chairman of the department of physiology, University of Chicago, was a guest speaker at a luncheon meeting and at a banquet in the evening.

**Society News.**—Dr. Harold E. Himwich, Albany, addressed the Medical Society of the County of Albany, May 27, on "Blood Sugar in Diabetes."—The Medical Society of the County of Saratoga held its annual spa therapy meeting at Saratoga Springs June 4. Speakers were Drs. Richard Kovacs, New York, on "Newer Methods of Heat Therapy"; Lee A. Hadley, Syracuse, "Diagnosis and Physical Therapy Treatment of Certain Painful Conditions of the Back"; Ralph Pemberton, Philadelphia, and Robert B. Osgood, Boston, medical and surgical aspects, respectively, of arthritis.—Dr. George W. Crile, Cleveland, addressed the Utica Academy of Medicine, May 14, on "Genesis and Treatment of Essential Hypertension."—Dr. Edward D. Churchill, Boston, addressed the Glens Falls Academy of Medicine, May 14, on "Lobectomy, Pneumonectomy and Thoracoplasty."

## New York City

**Personal.**—Dr. Thomas Hodge McGavack, formerly of the University of California Medical School, San Francisco, has been appointed associate professor of medicine, beginning July 1, at the New York Medical College and Flower Hospital.

**Society News.**—Health officers of the metropolitan area, including parts of New Jersey and Connecticut, formed the Metropolitan Health Officers' Conference at a meeting, June 5, at the New York City Department of Health building. Dr. Matthias Nicoll Jr., health commissioner of Westchester

County, was made temporary chairman and Dr. Charles F. Bolduan, of the New York health department, temporary executive secretary.

**Hospital News.**—Dr. Max Seide has been appointed superintendent of Cumberland Hospital, Brooklyn, to succeed Dr. Marcus D. Kogel. —Dr. Jack Masur has been appointed assistant director of Montefiore Hospital to succeed Dr. Morris Hinenburg, now medical director of the Brooklyn Jewish Hospital. —Dr. Carlos Monge of the Faculty of Medicine, Lima, Peru, and a member of the International High Altitude Expedition, discussed "Studies in High Altitudes: Chronic Mountain Sickness" at Mount Sinai Hospital, May 1.

**Dr. Park to Retire from New York University.** —Dr. William H. Park, Biggs professor of preventive medicine and director of bacteriological laboratories, New York University College of Medicine, has been granted a leave of absence for the session of 1936-1937 and will retire after that period. Dr. Park, who is now 72 years old, has been connected with the university since 1895. He was professor of bacteriology and hygiene from 1900 to 1933, when he received his present title. In the session of 1914-1915 he was dean of the school. Dr. Park, for many years director of the department of laboratories of the New York City Department of Health, reached the retirement age for that position Dec. 20, 1933, but his term of service was extended and was again extended, June 5, to September 30.

### OKLAHOMA

**Society News.**—Drs. Everett S. Lain and Minard F. Jacobs, Oklahoma City, conducted a cancer clinic as guests of the Woods-Alfalfa Counties Medical Society in Cherokee, May 26. —Dr. Raymond G. Jacobs, Enid, addressed the Garfield County Medical Society, April 30, on "Fractures of the Long Bones."

**Personal.**—Joseph B. Goldsmith, Ph.D., has been promoted to be associate professor of histology and embryology at the University of Oklahoma School of Medicine, Oklahoma City. —Dr. Joseph B. Carmichael, Duncan, has been appointed health officer of Stephens County to succeed the late Dr. Dock Long, Duncan.

### PENNSYLVANIA

**Society News.**—The fourth monthly graduate assembly of the Montour County Medical Society at Danville, June 5, consisted of a symposium on diseases of the eye, ear, nose and throat by Drs. George H. Cross, Chester; Frank C. Hammond, Philadelphia; John R. Simpson, Pittsburgh, and Francis W. Davison, Danville. Dr. Alexander H. Colwell, Pittsburgh, president, Medical Society of the State of Pennsylvania, gave an address and Dr. Harold L. Foss conducted an operative clinic. —The spring meeting of the central Pennsylvania branch of the Society of American Bacteriologists was held at Geisinger Memorial Hospital, Danville, May 16. Among speakers were Drs. Francis W. Davison, on "Clinical Manifestations of Bacterial Sensitivity" and John F. Conway, "Value of Pre-medical Training in Bacteriology." —Drs. Eben W. Fiske and Harold W. Jacox, Pittsburgh, conducted a seminar on physical therapy at Waynesburg, June 9, for the Greene County Medical Society under the auspices of the committee on physical therapy of the Medical Society of the State of Pennsylvania. —Dr. Ralph Pemberton, Philadelphia, addressed the Lehigh County Medical Society, Allentown, in April, on the treatment of arthritis. —Dr. I. Newton Kugelmass, New York, addressed the York County Medical Society, June 20, on "Blood Dyscrasias in Infancy and Childhood."

#### Philadelphia

**Society News.**—Dr. William D. Stroud was recently elected president of the Philadelphia Heart Association. —Dr. Albert E. Bothe addressed the Philadelphia Urological Society, May 25, on "Benign Hypertrophy of the Prostate with Tuberculosis." Dr. Bothe was elected president.

**Personal.**—Dr. Louis Tuft has been appointed to succeed Dr. John L. Laird as head of the laboratory in the state department of health. —Dr. P. Brooke Bland received the honorary degree of doctor of science at the commencement exercises of Franklin and Marshall College, Lancaster, June 3.

**Jefferson Alumni Dinner.**—The annual dinner of the Alumni Association of Jefferson Medical College was held at the Bellevue-Stratford Hotel, June 4, with more than 500 alumni present. Dr. Charles E. G. Shannon, president of the association, presided and speakers were Mr. Van Horn Ely, a trustee of the college; Dr. David M. Davis, professor of genito-urinary surgery; Dr. James W. Tankersley, Greensboro, N. C., representing the class of 1906; Dr. Andrew Wallhauser,

Pittsburgh, the class of 1916; Dr. Neal R. Moore, Bay City, Mich., the class of 1926, and Dr. Leonard W. Parkhurst, Wilkes-Barre, the class of 1936.

### RHODE ISLAND

**Personal.**—Dr. Henry Antonio Rosa has been named medical examiner in Portsmouth. Dr. Ralph J. Petrucci has been appointed medical examiner for the towns of Barrington and Warren. —Dr. Seth F. H. Howes, assistant superintendent of the State Infirmary, Howard, has been appointed superintendent to succeed Dr. Karl B. Sturgis.

### TENNESSEE

**Society News.**—Dr. Raymond Wallace addressed the Hamilton County Medical Society, Chattanooga, June 4, on "Recent Trends in Gynecologic Surgery." —Drs. George J. Sells and Raymond D. Tompkins, Johnson City, addressed the Washington County Medical Society, May 7, on angioneurotic edema and pain in the heart, respectively. —Dr. Jarrell Penn, Knoxville, discussed acute injuries to the back, May 5, at the meeting of the Knox County Medical Society, Knoxville. —Dr. George A. Hendon, Louisville, Ky., addressed the Nashville Academy of Medicine, May 26, on "Treatment of Fractures, with Special Reference to Ununited Fractures." —Drs. Robert L. Sanders and Thomas C. Moss addressed the Memphis and Shelby County Medical Society, May 5, on "Clinical Observations in 100 Cases of Cyclopropane Anesthesia" and "Aberrant Endometrium" respectively. Speakers at a meeting May 18 were Drs. David H. James and Joseph H. Francis on "Megacolon" and "Sympathetic Ophthalmia" respectively.

### VIRGINIA

**Personal.**—Dr. Charles Howe Eller, Charlottesville, has resigned as health officer of Albemarle County to become assistant director of rural health with the state health department, it is reported, and Dr. Adrian L. Carson, health officer of Fairfax County, has been made director of the bureau of maternal and child hygiene. Dr. Edward M. Holmes Jr., Richmond, has been appointed health officer for Fairfax County to succeed Dr. Carson.

**Society News.**—Speakers who addressed the Southside Virginia Medical Association at its quarterly meeting in South Hill, June 9, were the following Richmond physicians: Drs. Arthur S. Brinkley, on "An Unusual Case of Intestinal Obstruction"; William Lowndes Peple, "Radium in the Treatment of Nonmalignant Uterine Conditions"; Douglas G. Chapman, "Mechanism and Electrocardiographic Registration of Heart Beat in Health and Disease"; Paul D. Camp, "Clinical Diagnosis of Irregularities of the Heart," and William R. Jordan, "Care of the Feet in Diabetes."

### WISCONSIN

**Society News.**—Drs. Paul F. Doege, Marshfield, and Edwin G. Bannick, Rochester, Minn., addressed the annual meeting of the Ninth Council District of the State Medical Society of Wisconsin, May 7, at Stevens Point, on "Determination of Degrees of Malignancy as Applied to the Uterine Cervix" and "Treatment of Nephritis" respectively. —Drs. Arlie R. Barnes and Harry M. Weber, Rochester, Minn., addressed the April meeting of the Eau Claire-Dunn-Pepin County Medical Society on "Pulmonary Embolism: Its Effect on the Heart and Its Clinical Recognition" and "Roentgenologic Manifestations of the More Commonly Encountered Lesions of the Large Intestine" respectively. —Dr. Frank J. Hirschboeck, Duluth, Minn., addressed the Douglas County Medical Society, May 13, on "The Nervous Patient." —Dr. Edward K. Steinkopf, Pewaukee, addressed the Washington-Ozaukee County Medical Society, May 7, on modern treatment of tuberculosis. —Speakers at a meeting of the Milwaukee Society of Clinical Surgery, May 6, were Drs. Leland S. McKittrick, Boston, on "Management of Deep Infections of the Hand in Patients with Diabetes Mellitus"; Harry P. Ritchie, St. Paul, "Congenital Clefts of the Face and Jaws—Problems of Repair" and William J. Carson, Milwaukee, "Tuberculous Appendicitis." —Dr. Cyril G. Richards, Kenosha, was elected president; Dr. Harry E. Kasten, Beloit, vice president, and Dr. Sidney J. Silbar, Milwaukee, secretary, of the Wisconsin Urological Society at the annual meeting in Marshfield, April 23.

### PUERTO RICO

**University News.**—Dr. James W. Jobling of the department of pathology, Columbia University College of Physicians and Surgeons, represented the university at the annual meeting of the board of trustees of the School of Tropical Medicine at the University of Puerto Rico, which is conducted under

the auspices of Columbia. Dr. Chung-Un Lee, Peiping Union Medical College, Peiping, China, is spending some time at the school carrying out investigations of diseases caused by parasites.

### GENERAL

**Council on Birth Control.**—The National Medical Council on Birth Control has recently been formed to control and supervise medical policies of the American Birth Control League and to initiate, encourage and execute appropriate scientific research in the medical aspects of birth control. Dr. Frederick C. Holden, New York, is chairman and Dr. Eric M. Matsner, New York, executive secretary of the executive committee. Other members are Drs. Eliot Bishop, Brooklyn; Foster Kennedy, Edgar Mayer, Richard N. Pierson and Wilbur Ward, New York; Abraham N. Creadick, New Haven; Owen J. Toland, Philadelphia, and Prentiss Willson, Washington, D. C.

**French Information Center.**—The formation of the "French Information Center," with headquarters in New York and Paris, is announced. Representatives of various French and American activities have formed an association, by which the project will be financed. Membership is open to both French and American institutions, corporations and individuals. The New York office plans to keep on file reference books, statistics, periodicals and newspapers covering a wide range of questions and will attempt to gather documents not to be found in America at present or not easily accessible. The New York office announces that it has received a quantity of documentary material pertaining to French medicine and will be glad to place this material at the disposal of American physicians and aid them in any problem they may have concerning medicine in France.

**Changes in Status of Licensure.**—The state board of medical education and licensure of Pennsylvania recently reported the following action:

License of Dr. Richard P. Jahnig, whose last known address was Pottstown, Pa., suspended indefinitely, April 16, because of violation of the narcotic laws.

The New Jersey board of medical examiners reported the following action:

License of Dr. James M. Hackett, Leonia, N. J., revoked March 18, for conviction of the crime of criminal abortion.

The California State Board reported the following actions taken at the meeting, March 9-12:

Dr. Woodward B. Mayo, Los Angeles, license revoked for violation of probation.

Dr. Walter F. Pike, Oakland, placed on probation for five years without narcotic privileges.

Dr. William N. Powers, Los Angeles, license revoked for conviction of a felony.

Dr. Robert Bremner Smith, Yountville, license revoked for federal narcotic conviction.

Dr. Carl W. Wahrer, Seymour, Iowa, formerly of Sacramento, license revoked for federal narcotic conviction.

**Bequests and Donations.**—The following bequests and donations to medical institutions have recently been announced:

Lincoln Hospital, New York, \$1,000 by the will of the late Henry Wollman.

Paterson (N. J.) General Hospital, \$15,000 and its junior auxiliary, \$5,000 by the will of Mrs. Louise J. E. Whitehead.

United Hospital Fund, the residuary estate of the late Reid A. Kathan, estimated in 1929 at \$727,660, under the recently filed will of his widow.

Mount Sinai Hospital, \$25,000; New York Eye and Ear Infirmary, Lenox Hill and Montefiore hospitals, \$20,000 each; Beth Israel Hospital, \$15,000, and New York Polyclinic Hospital, \$10,000 by the will of Mrs. Madeleine S. Stern. All the hospitals are in New York.

University of Cincinnati College of Medicine, \$5,000 from Mrs. Christian R. Holmes for research in internal medicine and \$4,000 from Miss Mary Hanna to purchase 100 mg. of radium for the department of surgery.

Episcopal Hospital, Philadelphia, \$30,000 by the will of Mrs. Annie B. Moore.

Chestnut Hill Hospital, Philadelphia, \$10,000, and Episcopal Hospital of Philadelphia, \$5,000 by the will of Dr. William T. Van Pelt.

Misericordia Hospital, Philadelphia, \$1,000 by the will of Mrs. Katherine L. Farrell.

Pennsylvania Hospital, Philadelphia; Allegheny General Hospital, Pittsburgh; Trudeau Sanatorium, Trudeau, N. Y.; one fourth each of the income from an estate of \$822,160 left in trust by Mrs. Lillie Ingham Baker in 1931. The remaining fourth is to be distributed to various hospitals at the discretion of the trustees to help defray expenses of persons desiring the use of private rooms but unable to afford the entire charge.

St. Luke's and Children's Hospital, Philadelphia, \$9,400 by the will of Miss Lucy L. Haswell.

**Medical Bills in Congress.**—Changes in Status: S. 5, the Copeland food, drugs, devices and cosmetics bill, failed to become a law. The bill, as amended by the House Committee on Interstate and Foreign Commerce, passed the House Friday, June 19, and was sent to conference. Subsequently, however, the Senate accepted the House amendments to the bill, subject

to a new Senate amendment. The bill then again was brought before the House for consideration. The Senate amendment was defeated in the House and the bill died when the Congress adjourned, sine die, June 20. S. 4390 passed the House and Senate, providing that appointments to the Medical Administrative Corps shall be restricted to pharmacists who are graduates of recognized schools of pharmacy and requiring four years of instruction for graduation, and providing that the number of such pharmacists in the corps shall not exceed sixteen.

### FOREIGN

**Society News.**—Those who wish to attend the third International Congress of Orthopedic Surgery in Bologna, September 21-25, may benefit from reductions in transportation costs if they register with the general secretary, Dr. Delchef, in Brussels, Belgium, before July 15, according to an announcement. Dr. Fred H. Albee, New York, is a vice president of the congress.

**Personal.**—Mme. Irene Joliot Curie, daughter of the discoverers of radium, has been named undersecretary for scientific research in the recently organized cabinet of the French government. Madame Joliot Curie, who from her childhood collaborated with the late Madame Curie in her research, shared the Nobel Prize in medicine in 1935 with her husband, Frederic Joliot, for their work on radium.

**International Medical Week in Switzerland.**—The Swiss *Journal of Medicine* will sponsor the second "International Medical Week" at Lucerne August 31-September 5. Among the lecturers on the provisional program are Drs. John F. Fulton, New Haven, Conn.; E. von Gröer, Lwow, Poland; Wolfgang Heubner, Berlin; Edward Mellanby, London; François Rathery, Paris; Ferdinand Sauerbruch, Berlin, and Albert Szent-Györgyi, Szeged, Hungary. The final program and other information may be obtained from the secretary, International Medical Week, Klosterberg 27, Basle.

**Jubilee Book in Honor of Dr. Lambotte.**—Friends, pupils and patients of Dr. Albin Lambotte, chief surgeon of the Stuiwenberg Hospital, Antwerp, Belgium, have arranged to publish a jubilee book in his honor. It is planned that the book will contain the history of the development of surgery of the bones and joints, to which Dr. Lambotte has contributed notably, outlined in articles by leading orthopedic surgeons from all parts of the world. It will appear in two volumes, according to an announcement. Subscriptions may be addressed to Dr. Jean Verbrugge, 75 Avenue Van Ryswick, Anvers, Belgium. The price of foreign subscriptions is 30 Belgian francs.

## Government Services

### Dr. Hall Named Chief of Zoology Division

Maurice C. Hall, Ph.D., since 1925 chief of the zoological division of the bureau of animal industry of the U. S. Department of Agriculture, has been transferred to a similar position at the National Institute of Health. Three of his associates in the bureau of animal industry, Eloise B. Cram, Ph.D., Myrna F. Jones, Ph.D., and John Bozicevich, A.M., will accompany Dr. Hall to the National Institute of Health. Dr. Hall received his degree of doctor of philosophy at George Washington University in 1915. He is 55 years of age. Benjamin Schwartz will succeed Dr. Hall at the bureau of animal industry.

### Examination for Army Medical Corps

The War Department announces an examination during the week of August 24 to qualify candidates for appointment as first lieutenants in the Medical Corps, U. S. Army, to fill vacancies to occur during the fiscal year 1937. The examination is open to all male graduates of recognized medical schools who have completed one year's internship in an approved hospital and who will not be over 32 years old at the time it will be possible to tender a commission. Boards of experienced medical officers will conduct the examinations, which will consist of a physical examination, a written examination in professional subjects and a determination of the candidates' adaptability for military service. Full information and application blanks will be furnished by the War Department on request addressed to the adjutant general. Applications will not be considered after August 10. About thirty-five vacancies will occur during the year, and in addition an increase of fifty officers has been provided for in the War Department Appropriation Act.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 9, 1936.

#### A Bureau of Human Heredity

Some well known men, including Lord Moynihan, Sir Arthur Keith, Sir Grafton Elliot-Smith, Sir E. Gowland Hopkins and Sir Humphry Rolleston, have formed a committee to obtain support for the Bureau of Human Heredity, which was recently set up in London. In a joint letter to the *Times* they ask for \$50,000 to carry on the work for five years. They point out that problems of national health have reached a point at which the hereditary element can no longer be neglected. Medical leaders are no longer satisfied with the alleviation of disease but feel the need of fuller knowledge of heredity in connection with prevention. This applies not only to preventing the transmission of defects. It is recognized that methods of cure must vary with the type of constitution of the patient, and here information as to heredity is important. In education, in training and in choice of a career the ascertainment of innate endowments is useful. The Imperial Bureau of Plant Genetics at Cambridge and of Animal Genetics at Edinburgh have achieved much by setting up simple machinery for collecting information based on the result of research and making these available for the practical breeder. The Bureau of Human Heredity will follow these models. The signatories say that in these days of international mistrust and animosity it is refreshing to find a field in which representatives of nearly every civilized country are engaged in cooperative work. A scheme for an international clearing house of facts concerning human heredity has been evolved by a small international committee, which has delegated to its British members the task of setting up a bureau in London for the collection and distribution of all authentic information on human genetics. The signatories point out how strange it is that students of fruit flies or mice have at their command the latest information, while those similarly concerned with man can look nowhere for a complete survey of the knowledge they require.

#### The Problem of Race

At the Royal Institute Mr. Julian Huxley gave an address on "The Race Problem" in which he showed the difficulties surrounding the use of the term race as applied to man and the misuse to which it is put by politicians and others. It was obvious that the different geographic groups of the human species differed inherently from one another. The term race had usually been used to denote such distinguishable groups, but difficulties arose. In the first place, characteristics that had no genetic basis but were national, cultural and linguistic had been erroneously ascribed to race. For example, there cannot exist such a thing as an Aryan race, since the term concerns language. Again, the main obvious differences between, say, the English, the French and the Germans, are not genetic but of national and cultural origin. In the second place, modern genetics has shown that after a cross all possible combinations of the genes concerned will be produced and will then continue to recur. In the absence of selection, no even approximately uniform blend will be formed. In the third place, man is so mobile that migration and intercrossing between different groups have been occurring on a large scale since before the dawn of history. Hence nothing approximating to a pure race now exists, with the possible exception of a few remote and primitive tribes. At best, race may be legitimately used of the hypothetical major groups (black, white and yellow) into which it has been deduced that our species early became differentiated

and which may be called primary races, and of the equally hypothetical subgroups apparently produced by later differentiation of the white race into Mediterranean, Nordic and Alpine, which may be called secondary races.

At the present day there exists no important group which can properly be called a race, and the use of the term not only has no useful application but leads to confusion, both scientific and political. For groups of people genetically distinguishable from other groups, Mr. Huxley would use some noncommittal term, such as ethnic group or *ethnos*. He holds that to define race in man is scientifically impossible, since the implications of the term do not correspond with reality. As the word race has been widely used in pseudoscientific ways to justify and rationalize various political and nationalist activities, he considers it highly desirable that some international inquiry should be made which would result in an impartial scientific pronouncement on the subject.

#### The Income Tax and the Birth Rate

The new taxes of the budget not only increase the rate payable on income but also increase the allowance made for dependent children. The result is that, while the unmarried and other payers of income taxes who do not have children dependent on them will be more highly taxed, 80 per cent of those with dependent children will gain. The object is no doubt to place the greater burdens on those best able to bear them, but it might be regarded as an attempt to encourage parenthood at a time when the birth rate has been reduced to a level which means a declining population. However, the amount of tax escaped by parenthood is too small for any perceptible effect. Moreover, the declining birth rate affects all classes, even those below the income tax level. It does not seem likely that the government had any such intention in view. Encouragement of the birth rate for militaristic reasons has been adopted as a deliberate policy in some continental countries, and recently by Russia, but it has never been as much as suggested in England and would certainly be scouted by most people. In a letter to the *Times*, Mr. R. A. Fisher, Galton professor of eugenics at University College, London, points out that, while the birth rate of England is now only three fourths of that necessary to maintain the population, no reasonable estimate would place the fertility of married payers of the income tax as high as two thirds of that of the general population. Thus their rate is not half that required for replacement. They bear the economic burden of rearing and educating children as well as part of that of the working class. The general decrease of the population of this country, which is now imminent, will entail economic consequences that have not received adequate attention.

#### The Official Grading of Milk

The minister of health has issued a new milk order to improve and simplify the special designations of milk. The present designations are "certified," "grade A (tuberculin tested)," "grade A" and "pasteurized." So many grades have been found to create confusion and some of the designations do not give consumers a clear indication of the nature of the milk purchased. The number of grades is to be reduced to three: "tuberculin tested," "accredited" and "pasteurized." "Tuberculin tested" replaces the existing "certified" and "grade A (tuberculin tested)," which both come from herds subjected to a stringent test for the absence of tuberculosis. "Tuberculin tested" will in future be the only designation. This milk may, if desired, be pasteurized, when it must be sold as "tuberculin tested milk (pasteurized)." It will then have the double security of tuberculin testing (as a safeguard against bovine tuberculosis and pasteurization as a safeguard against all milk-borne diseases). "Tuberculin tested milk" will be subjected to tests for ensuring cleanliness and good keeping qualities, but, because

of the need for simplification, the specially stringent bacteriologic test applied to "certified milk" is not retained. The other characteristic of "certified milk" was that it had to be bottled on the farm. When this is done the designation "tuberculin tested milk (certified)" will be permitted.

"Accredited milk" will be subject broadly to the same conditions as the former "grade A"; i. e., it will be raw milk from cows regularly inspected by a veterinary surgeon but not tuberculin tested. It will be subjected to the same bacteriologic tests as "tuberculin tested." The designation will indicate that it comes from herds of producers enrolled under the accredited producers' scheme, of which there are now nearly 16,000. When it is bottled on the farm, "farm bottled" may be added. "Pasteurized milk" will be, as at present, milk that has been held at a temperature of 145 F. for thirty minutes.

The present method of prescribing the bacteriologic standard by a plate count test of 200,000 bacteria per cubic centimeter will be superseded by a color test recommended by the Medical Research Council, but the test for coliform bacilli will be retained.

#### Radiology in the Medical Curriculum

A committee of the Royal Society of Medicine has made an important report on the place of radium in the medical curriculum. The teaching of radiologic anatomy and attendance on lecture courses in radiology and at the x-ray department are now required only in certain medical schools. The committee has made the following recommendations: Instruction in the physics of radiation should be given in the preclinical period. Radiology should be used when practical in the teaching of anatomy, physiology and pathology. Instruction in the use of x-rays in diagnosis and of x-rays and radium in treatment should be required in the clinical period of the curriculum. This may be accomplished: 1. By combined teaching by the clinician and radiologist. 2. By the radiologist conducting demonstrations in the x-ray department on selected films. Physicians and surgeons should attend these demonstrations and take part in the discussions. 3. By including lecture demonstrations by a radiologist in the course of lectures on medicine and surgery. 4. By forming an exhibition of roentgenograms illustrating clinical cases. The scheme to be adopted is left to the individual schools, but a combination of 1 or 2 with 3 and 4 is considered most satisfactory.

#### The Etiology of Phlyctenular Keratitis

At the Ophthalmological Society Arnold Sorsby, Richard Hamburger and R. L. Benham communicated an important paper on the vexed question of the etiology of phlyctenular keratitis. Their researches on a large scale at the White Oak Hospital, Swanley, show a positive Mantoux reaction in 80 per cent of cases. They also made an exhaustive survey of the literature. They conclude that the phlycten is a nonspecific reaction of the conjunctiva and conjunctival layer of the cornea—probably of anaphylactic nature. In something like 75 per cent of cases the state underlying the reaction is a tuberculous infection that occurs at an earlier age than in the normal child population. As in the latter, the infection is overcome in the great majority of cases. Because they are infected with tuberculosis earlier in life, phlyctenular cases give a greater quota of tuberculous disease than normal children. (The course of tuberculosis depends much on the age at which the patient is infected.) In a series of 238 cases followed from five to ten years, the subsequent incidence of tuberculous disease was ten times the notification rate for children of the corresponding age groups. The authors conclude that phlyctenular keratitis is not a manifestation of tuberculous disease but of tuberculous infection. Other factors than tuberculous infection can produce the phlyctenular reaction.

## PARIS

(From Our Regular Correspondent)

May 8, 1936.

### Danger of Vaccination Against Brucellosis with Living Vaccines

At the April 7 meeting of the Académie de médecine of Paris, veterinarians Velu and Zottner called attention to the fact that the use of living vaccines rendered the diagnosis of brucellosis in animals very difficult. Another contribution to the subject was presented at the April 21 meeting of the same society by Merliac and Lisbonne under the title "A Case of Undulant Fever of Bovine Origin: Danger for Human Beings of Animal Premunition with Living Vaccines." A woman, aged 52, wife of a farmer, complained in September 1935 of headache and lumbago, which had not improved after ordinary treatment. The only objective finding was a persistent rise of temperature (100-102 F.) accompanied by profuse sweats. The Widal test for typhoid was negative when the patient was first seen two months after the onset, but the blood showed a positive Wright reaction in a dilution of 1 to 250; hence the suspicion of an undulant fever was confirmed. Bacilli showing the typical reactions of *Brucella abortus-bovis* were found November 18 in the blood culture. After a prolonged febrile period the patient was considered as cured at the time the paper was read. Careful inquiry elicited the fact that no other cases of brucellosis had been reported from the section of country in which the patient had lived for many years.

A guinea-pig was inoculated with the milk of a cow which the patient had taken care of. Cultures of the blood of the guinea-pig also revealed the presence of *Brucella abortus-bovis*. The bacilli isolated from the patient's blood and that of the guinea-pig were found to possess identical properties (ability to produce hydrogen sulfide. The cow had been kept isolated from all other animals and had never aborted, wherefore the question arose as to how the brucella infection had occurred. On inquiry it was found that the cow had been given two prophylactic (premunition) injections of living brucella vaccines in 1933. Specimens of this vaccine were also found to possess the same property, which is atypical for *Brucella abortus-bovis* to produce hydrogen sulfide. Thus the three mediums (blood of patient, that of guinea-pig and the vaccine) possessed identical properties and the chain of evidence seems to be complete that the living vaccine infected the cow and, in turn, the patient.

At the 1934 congress of hygiene one of the authors, Lisbonne, as also Taylor and Vidal, called attention to the fact that undulant fever had been contracted by veterinary surgeons who had been accidentally inoculated by living vaccines; therefore the use of these in the prevention of "epizootic abortion" ought to be carefully controlled. The case reported by Merliac and Lisbonne shows that a living vaccine can be harmful not only by direct inoculation but by an intermediary, such as an infected animal.

Much care should be employed in selecting strains of bacilli for use as living vaccine. Only those which a number of experiments have shown to be attenuated should be used. Such a research is not easily accomplished. The use of living vaccines, at least in France, is not subject to the control which it merits. The indirect danger to human beings, as illustrated by this case, is one that cannot be minimized.

#### Acute Endocarditis Due to Bacillus of Pfeiffer

At the meeting of the Société médicale des hôpitaux of Paris, April 3, Lesne and his associates added another case of severe generalized infection, with an endocardial origin, due to the bacillus of Pfeiffer. A girl, aged 15 years, had been taken suddenly ill six days before admission to the hospital. At the onset, following emesis, a chill was noted followed by high temperature, which persisted without chills but was accom-



panied once by epistaxis. Soon after admission, the clinical picture appeared to be that of an endocarditis of probable rheumatic origin. A splenomegaly was noted. Three blood cultures were negative. About three weeks after admission, the clinical picture became that of acute septicemia, with recurrent chills, sweats and high temperatures and symptoms like those of a splenic infarct. Hemocultures during these three weeks revealed on two occasions the presence of a filament-like gram-negative bacillus, which was identified by Legroux of the Pasteur Institute as the bacillus of Pfeiffer. Symptoms of an acute nephritis appeared toward the end of the fourth week following the recurrence of chills and the girl died with the symptoms of a uremic coma.

The bacillus of Pfeiffer found in the blood was very difficult to reinoculate on culture mediums, but this was finally accomplished.

### Compulsory Antidiphtheria Vaccination

At the same meeting Poulain quoted from the statistics of a large city, St. Etienne, in Central France on the value of prophylactic vaccination with the Ramon antitoxin in preventing the spread of diphtheria. An epidemic occurred in one of the suburbs, which involved from 8 to 10 per cent of the school children. The epidemic did not extend to St. Etienne, but nevertheless there were a number of cases in the city itself. Thirteen of these occurred in 1,000 nonimmunized children while one case was observed among 5,000 who had been vaccinated. Faced with the danger of extension of the disease and the fact that from 15 to 20 per cent of the children had not been vaccinated, an appeal was made to all parents to have all children immunized who had not received the anatoxin and to have all those already vaccinated subjected to another vaccination. This campaign was successful beyond all expectations, resulting in from 90 to 95 per cent of all school children now being vaccinated. From 60 to 70 per cent of these have received ninety anatoxic units.

Observations during the past seven years at St. Etienne have permitted the following conclusions:

1. A proportion of 80 per cent vaccinated children is sufficient to prevent a widespread extension of an epidemic but permits small centers of infection to exist which become a serious menace if there is a decrease in the number of vaccinated children.
2. To keep up a high percentage of vaccinated children a constant propaganda to secure written permission of the parents is essential.
3. In vaccinations consisting of only two injections occasional but benign cases persist.

To cause diphtheria to disappear completely, antidiphtheria vaccination should be made obligatory, at least in cities, before admission to schools. A second vaccination should be given one or two years later.

### Coagulation of the Blood

At the Dec. 11, 1935, meeting of the Société française d'hématologie, Nolf of Brussels stated that in spite of numerous efforts made to explain the physiology of coagulation the causes still may remain obscure. The theories generally accepted are far from being proved, so that much confusion still exists. Does the plasma contain all the elements essential to the formation of fibrin and thrombin or is the plasma in a pure state, according to the classic theory, noncoagulable because it lacks an essential element which the leukocytes and blood platelets furnish? Antithrombin is elaborated in the liver. Antithrombin disappears during coagulation and it is this digestion or consumption of the antithrombin which is the first stage of coagulation. The thrombin is said to be a product of a substance termed prethrombin, but Nolf does not believe that thrombin should be applied to a definite chemical entity;

rather one must apply the term thrombin to an ensemble of nonsaturated complexes of fibrinogen which appear during the act of coalescence of colloidal particles, termed coagulation of the plasma. Thrombin is not the result of the transformation of a single substance, prothrombin, but is formed by the union of two protein constituents of the plasma, the thrombozyme and the thrombogen.

The recent work of Gengou on the coagulating action of staphylococci on the plasma amply confirms Nolf's views. The intervention of fibrinogen favors the union of thrombozyme and thrombogen and in very stable liquids permits formation of thrombin. This permits the abandonment of the classic theory of coagulation occurring in two steps and its replacement with a one step process. Fischer in his studies on coagulation in birds has shown that the formation of fibrin does not await the moment when all the necessary thrombin has been formed but begins immediately.

Nolf maintained that coagulation seems essentially to be an autocatalysis.

### Prophylaxis of Contagious Diseases in France

The chairman, Professor Lemierre, of the Special Committee of the Academy of Medicine, gave the report for 1934. Typhoid existed in practically every department (county) of France, in isolated cases or in epidemics that were sharply localized. Some ascribe the recrudescence of the disease to the drought which existed during the greater part of 1934, so that people were obliged to seek water far from their homes at polluted sources. The ingestion of clams at seaside resorts was responsible for a large number of cases. In spite of warnings and legal procedures, the shores from which shellfish of all kinds are obtained continue to be found too near the outlet of sewers. This is especially true of Toulon, the principal French naval base. Vaccination has greatly diminished the incidence of typhoid, but unless made compulsory, as in the case of those entering military or naval service, its prophylactic value is ignored by the average citizen.

Variola is practically nonexistent in France. Occasionally, cases are found, as recently at Reims, in those coming from other parts of Europe. The benefits of vaccination are well illustrated by the diminution of variola in Algiers, a large French colony. In 1927, 4,000 cases of variola were reported, whereas in 1934 there were only nineteen cases.

Measles is perhaps the most common of all the contagious diseases in France.

The incidence of diphtheria has been greatly lessened as the result of an organized campaign to use the Ramon anatoxin as a vaccine. Some cases of diphtheria occurred in vaccinated children. This emphasizes the necessity of revaccination if the Schick reaction remains positive. This was the case in 1934 in 40 per cent of 250 children who had been given three injections of the anatoxin in 1933.

Isolated cases of cerebrospinal meningitis were reported from fifty-four of eighty-eight departments. The search for carriers always resulted negatively; hence prophylactic measures are impossible at present. The mortality was very high, 47 per cent of eighty-five reported cases, despite early specific treatment.

Isolated cases of poliomyelitis were reported from fifty-seven of eighty-eight departments. There were seventy-one cases with twenty-two deaths in the Paris region. No progress was made in clearing up the manner in which the infection spreads.

There was ample evidence of an increase in the incidence of undulant fever. It was reported from forty-two of eighty-eight departments, located in all parts of France. *Brucella melitensis* was responsible for practically every case. The atrium of infection was most frequently through skin abrasions, less so as the result of drinking unboiled milk or of eating fresh cheese. Brucellosis in human beings and in animals are closely allied,

although due to different types of the *Brucella* organisms. Efforts are being made to immunize those whose occupations bring them into contact with animals who are carriers or are infected by organisms of the *Brucella* type.

## BERLIN

(From Our Regular Correspondent)

April 29, 1936.

### The Sick Insurance Societies During 1934 and 1935

The final figures on the work of the sick insurance societies during the years 1934 and 1935 have been made available. The number of such organizations tends to decrease as the result of mergers of the smaller societies. In 1914 sick insurance societies in the German reich numbered more than 10,000; in 1934 there were barely 6,000. The total membership in 1934

TABLE 1.—Type of Assistance in Sick Aids

Type of Aid	Amount Expended in Reichsmarks
Medical treatment .....	330,683,000
Dental treatment .....	98,163,000
Medicaments and therapeutic accessories.....	158,976,000
Hospital care .....	224,548,000
Sick benefits in cash.....	224,121,000

amounted to nearly 20,000,000 persons, of whom 13,000,000 were males. The number of cases in which the societies according to statute became liable for payment of claims increased from 35,000,000 in 1932 to 46,400,000 in 1934. The insured himself received the benefit in 31,700,000 of the cases for 1934, and relatives of the insured in 14,700,000 cases. Two

TABLE 2.—Average Amount per Member Expended by Sick Insurance Societies

Year	Amount	Year	Amount
1929 .....	20.86 RM	1932 .....	16.50 RM
1930 .....	20.66	1933 .....	16.26
1931 .....	18.61	1934 .....	16.57

factors are responsible for the increased morbidity: 1. Persons who had been unemployed for a long time were not equal to exacting occupational requirements and hence were more susceptible to illness. 2. Many persons, fearful of losing their jobs if they reported sick, failed to report. The danger of these eventualities has lessened with the improvement in the

TABLE 3.—Disbursements According to Type of Organization

Class of Insurance Organizations	Total Expenditure for Doctor's Fees in Reichsmarks	Total Membership	Expenditure per Member in Reichsmarks
Municipal .....	179,462,000	12,124,000	14.80
Rural .....	20,732,000	1,802,000	11.50
Industrial .....	54,734,000	3,002,000	18.25
Guild (innung) .....	7,738,000	529,000	14.63
Miners .....	10,605,000	564,000	18.80
Supplementary (ersatz) ..	56,547,000	1,878,000	30.11

labor market. This improvement has also brought about an increase in the number of insurance holders even among the upper age groups. In 1934, 6,800,000 cases of illness led to temporary working disability; in 1933 there were 5,400,000 such cases. On the other hand, the average duration of illness declined from 29.3 days in 1932 to 24.6 days in 1934.

The number of cases in which obstetric care was paid for increased about 32.7 per cent, from 574,515 cases in 1933 to

762,428 in 1934. The number of fatalities rose from 137,670 to 146,191, because of an increase in the number of older workers employed.

Both income and expenditures of the sick insurance societies increased during 1934. Gross income amounted to nearly 1,300,000,000 reichsmarks, or 62.10 reichsmarks per member. Disbursements increased from 1,181,000,000 reichsmarks to 1,314,000,000 reichsmarks; that is, an increase per member of from 63.69 to 65.89 reichsmarks.

TABLE 4.—Expenditures per Member

	Reichsmarks
Treatment by approved physicians.....	15.37
Dental treatment .....	4.68
Medicaments and other therapeutic adjuncts.....	8.08
Hospital care .....	11.67

The sum of 1,055,000,000 reichsmarks was expended for sick aids; its distribution according to type of assistance is given in table 1.

All the sick insurance societies (including the ersatz, or supplementary societies) expended the average amounts per member from 1929 to 1934 given in table 2.

The amount disbursed in physicians' honorariums differed considerably according to the type of organization, as table 3 illustrates.

TABLE 5.—Increase in Disbursements from 1933 to 1934

Medical treatment .....	2.0 per cent
Dental treatment .....	8.8 per cent
Medicaments and so on.....	9.6 per cent
Hospital care .....	1.6 per cent

For obstetric care, 122.40 reichsmarks per member was expended; for death claims 84.77 per insured person. Administrative costs amounted to 135,100,000 reichsmarks.

Unencumbered assets of the organizations, despite a decrease of some 17,900,000 reichsmarks, still totaled 818,700,000 reichsmarks. Reserve funds decreased by around 35,500,000 reichsmarks; they were however, with 402,300,000 reichsmarks, double the amount stipulated by law.

TABLE 6.—Income of Members in Billions of Reichsmarks

1929.....	31.6	1933.....	18.5
1930.....	29.5	1934.....	21.1
1931.....	24.0	1935.....	22.2
1932.....	18.5		

According to official monthly reports, the number of insurance societies was considerably decreased during 1935. On Jan. 1, 1936, there were barely 5,000 such organizations, as against more than 21,000 in 1913.

The total membership amounted to around 20,800,000 on Oct. 31, 1935, against 17,800,000 at the beginning of 1933. Cases of illness involving impaired working capacity increased in number from 7,400,000 in 1934 to 8,000,000 in 1935. This was due to the factors that have been adduced. The influenza patients are also included in the 1935 total.

Total expenditures (1,272,600 reichsmarks) exceeded the total income by around 57,600,000 reichsmarks. The per member expenditures in 1935 by the legally authorized societies are given in table 4.

Expenditures for these services increased in varying degree: for medicaments the increase was 9.3 per cent; for dental treatment, 5.2 per cent; for hospital care, 3.5 per cent, and for medical treatment, 1.3 per cent.

Disbursements for the same purposes increased from 1933 to 1934 as in table 5.

It will be noted that the cost of treatment by approved physicians showed a modest increase from 1933 to 1935.

The personal administrative costs increased 3.2 per cent per member, the material costs 5 per cent per member. Gross income increased around 4.5 per cent. The National Bureau

TABLE 7.—*Fluctuations of Average Income*

1929.....	1,508 RM	1933.....	1,099 RM
1930.....	1,452 RM	1934.....	1,165 RM
1931.....	1,263 RM	1935.....	1,180 RM
1932.....	1,083 RM		

of Statistics attributes this to an increase in the incomes of members. In table 6 the total income of all the members from 1929 to 1935 is given in billions of reichsmarks.

The average income per member showed the fluctuation given in table 7.

### ITALY

(From Our Regular Correspondent)

April 15, 1936.

#### Some Problems of Physicians

The first reunion of the *Corporazione delle professioni e delle arti* was recently held in Rome under chairmanship of the head of the government. The vice president of the corporation observed that the free activities of the medical profession come to a standstill whenever new institutions of the nature of the *Casse Mutue Sanitarie* (centers for medical care of insured workers) are opened. He stated that in order to protect medical practice it is necessary to review the plans of the several branches of medicine, to establish restricted and special functions for each different branch and to make compulsory the registration of practitioners in the book for that purpose. The new national medical fees were discussed. The National Syndicate of Physicians suggested a plan of fees in which there is a tendency to standardize the fees of the several provinces and to fix a minimal fee without indicating the maximal charges, excluding from the fee the medical attendance given by specialists, regular professors and university professors. The following are the charges proposed: visits for consultation and care of the patient at his own home, 20 lire (\$1) if it is only one visit and 15 lire (\$0.75) if there are several consecutive visits. The charges for visits for consultation and care of the patient at the physician's office will be 15 lire (\$0.75) for only one visit and 10 lire (\$0.50) for several consecutive visits. Consultations in emergencies will be charged with 25 lire (\$1.25) if during the day and 40 lire (\$2) if during the night.

#### Influenza and Tuberculosis

The *Federazione per la lotta contro la tubercolosi* recently discussed the influence of influenza on development of tuberculosis. Professor Ramoino stated that influenza prepares the terrain for the development of common chronic catarrh, which predisposes the organism of the patient to the development of tuberculosis.

Professor Manara emphasized the importance of establishing, with precision, the clinical picture of sporadic influenza in order to differentiate these types of influenza from tuberculosis when the latter follows an atypical evolution.

Professor Maragliano has seen a large number of cases of pulmonary tuberculosis, in more than half of which the evolution of the disease was related to an attack of influenza. As a rule the postinfluenzal symptoms are so trivial that they are not noticed. There is slow but progressive loss of weight, slight fever in the evenings, weakness, and incapacity for physical and mental work. Cough and other symptoms which erroneously have been considered as early symptoms of

pulmonary tuberculosis are absent. If the patients are seen early in the development of the disease, both clinical and roentgen examinations fail to prove the presence of tuberculosis. Early diagnosis is possible, however, in this type of pulmonary tuberculosis by estimating the symptoms given by the tuberculous toxemia, the evaluation of which is of importance in controlling further development of the disease.

#### Selection of Physicians by Insured Workers

An agreement was recently made for the medical and surgical care of insured workers in the *Casse Mutue dei lavoratori de l'industria*. As a rule the consultations and treatment of the patients will be made in the clinics for ambulatory patients, except in cases in which the patients are in such a condition as to be unable to go to the ambulatory clinic. In the latter event the patients will be seen and treated at home. Insured workers are free to select their own physicians, either from those of the group of municipal physicians or from those who have a private clientele; but after having chosen a physician they cannot change to another during an illness. Physicians who practice in connection with the insurance societies will be registered in a special provincial book of registration. Enforcement of the standards established in the agreement will be in the hands of a committee.

#### Surgical Society Meeting

Professor Finsterer of Vienna spoke on surgery of the large intestine recently before the *Società Piemontese di chirurgia*. Surgical indications in constipation are restricted to grave cases after failure of diet and medical treatments if cathartics administered cause intense pain to the patient. The speaker never resorted to the performance of anastomosis in treating either spastic constipation or megacolon. In some grave cases of spastic constipation, simple distention of the anal sphincter, either hypertrophic or with anal fissure, has resulted in cure with regression of a marked dilatation of the sigmoid flexure of the colon. The anal sphincter should be investigated before a decision is made to perform any operation in cases of constipation. Resection of the sigmoid flexure is indicated in megasigmoid in cases in which the formation of valves in the flexure are the main cause of constipation. The speaker, in performing hemicolectomy, removes the half of the colon up to the pelvic colon. The elimination of general anesthesia for the operation and the use of laterolateral anastomosis are the factors that account for the satisfactory results obtained.

Professor Uffreduzzi spoke on postanastomotic peptic ulcer. The nature of the postanastomotic scar is related to the constitution of the patient. Innervation disturbances with paralysis of the anastomotic loop or with spasms of either the afferent or the efferent loops may take place in the new formed pylorus. Frequently these disturbances are caused by the presence of a peptic ulcer located at either the gastric or the jejunal anastomotic ends or in the jejunum at a certain distance from the anastomosis. Postanastomotic peptic ulcers may follow a long evolution without grave complications. Surgery is the only indicated treatment. The speaker classified his patients in seven groups according to the type of operation performed.

## Marriages

HENNING W. MATHIASSEN, Persia, Iowa, to Miss Rita Rose Dougherty of Manilla in Des Moines, May 25.

DONALD MUNRO MACINTOSH JR., Old Fort, N. C., to Miss Ruth Ellen Gish of Philadelphia, May 6.

CARL D. OELRICH, Sioux Center, Iowa, to Miss Thelma Mae Austin of Albany, Mo., May 15.

JOEL ERNEST GOLDTHWAIT to Mrs. Phillip Leverett Saltonstall, both of Boston, April 30.

CARL V. MORRISON, Grinnell, Iowa, to Miss Dorothy Nafus of Nashua, April 25.

## Deaths

**James Tate Mason** ☉ Seattle, President of the American Medical Association, died, June 20, at the Virginia Mason Hospital, of endocarditis with multiple emboli, aged 54. Dr. Mason was born in Virginia, May 20, 1882, the son of Dr. Claiborne Rice Mason of Lahore, Orange County, Va. After graduating from the University of Virginia Department of Medicine, Charlottesville, in 1905, Dr. Mason engaged in the practice of surgery first at Philadelphia, then at Franklin, Wash., and finally at Seattle, where he had practiced continuously since 1909. From 1916 to 1920 he was surgeon and superintendent of the King County Hospital. Since 1920 he had been chief surgeon to the Mason Clinic and president of the Virginia Mason Hospital. He was consulting surgeon of the United States Marine Hospital, Seattle, the American Mail Line, the Alaskan Steamship Company and the Northern Pacific Railroad Company. Dr. Mason was a member of the House of Delegates of the American Medical Association for six years, between 1928 and 1934; he was secretary of the Section on Surgery, General and Abdominal, from 1923 to 1926, when he was elected chairman, serving in that capacity for one year. Dr. Mason was past president of the Pacific Coast Surgical Association, and in 1930 vice president of the American Association for the Study of Goiter; a member of the American Surgical Association, Southern Surgical Association, Western Surgical Association, and the North Pacific Surgical Association, and fellow of the American College of Surgeons. He was at one time a county coroner and a member of the state board of health.

Tate Mason was a genial, friendly man, much beloved by all who knew him. He was a builder, a true leader. During his term as President-Elect he traveled widely on behalf of the Association, notwithstanding ill health and the pressure of his own affairs. During the Kansas City session, although imminently confronted by impending death, he kept in intimate touch with the progress of affairs, made the necessary appointments and urged the promotion of high standards and high ideals. By his death, American medicine loses a leader, chosen for its highest honors, who demonstrated by his life and by his death how well he merited this recognition.

**William Hemple Arthur** ☉ Brigadier General, U. S. Army, retired, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1877; member of the House of Delegates of the American Medical Association in 1915; entered the army as an assistant surgeon in 1881; commander of a hospital ship during the Spanish-American War; served with the China Relief Expedition in 1900 and in the Philippines; in 1908 was promoted to lieutenant colonel and in 1911 colonel; appointed commandant of the Army Medical School in 1915; served during the World War; was retired as a brigadier general under the Act of June 21, 1930; fellow of the American College of Surgeons; formerly emeritus professor of military surgery, Georgetown University School of Medicine; at one time medical director of the Georgetown University Hospital; aged 80; died, April 19, in the Walter Reed General Hospital.

**Henry Hawkins Tyson** ☉ New York; University of the City of New York Medical Department, 1887; at one time instructor in ophthalmology, Columbia University College of Physicians and Surgeons; member of the American Ophthalmo-

logical Society; fellow of the American College of Surgeons; past president of the New York Ophthalmological Society; during the World War, eye examiner for the third district of the New York Draft Board; ophthalmic surgeon to the Herman Knapp Memorial Eye Hospital; ophthalmologist to the Sea Breeze Hospital, Brooklyn, and the Letchworth Village, Thiells; assistant in the eye department at the Vanderbilt Clinic; author of numerous monographs on ophthalmologic subjects; aged 70; died, April 18.

**Edgar Warden Phillips** ☉ Rochester, N. Y.; Cornell University Medical College, New York, 1911; assistant professor of surgery, University of Rochester School of Medicine; fellow of the American College of Surgeons; member of the American Association for Thoracic Surgery; attending surgeon to the Rochester General Hospital, surgeon to the Monroe County Tuberculosis Sanatorium and consulting surgeon to the Rochester State Hospital; aged 47; died, May 5, of lobar pneumonia.

**William Clifton Lyle**, Carrollton, Ga.; University of Georgia Medical Department, Augusta, 1893; member of the House of Delegates of the American Medical Association, 1911, 1914 and 1922; fellow of the American College of Surgeons; for many years secretary of the Medical Association of Georgia; formerly professor of otology at his alma mater; served during the World War; aged 64; died, April 15, of cardiovascular renal disease and arteriosclerosis.

**George Whitfield Stephens** ☉ Melrose, La.; Tulane University of Louisiana Medical Department, New Orleans, 1907; member of the New Mexico Medical Society and the American Psychiatric Association; served with the British Army during the World War; formerly superintendent of the New Mexico Home and Training School for Mental Defectives, Los Lunas; aged 57; died suddenly, April 26, in a hotel at New Orleans, of heart disease.

**Wells Teachnor Sr.** ☉ Columbus, Ohio; Medical College of Ohio, Cincinnati, 1892; member of the House of Delegates of the American Medical Association in 1924 and 1925 and from 1927 to 1936; past president of the Ohio State

Medical Association; fellow of the American College of Surgeons; member of the staff of the Hawkes Hospital of Mount Carmel, now known as the Mount Carmel Hospital; aged 66; died, June 12.

**Clarence Eugene Simonds**, Willimantic, Conn.; University of the City of New York Medical Department, 1897; member of the Connecticut State Medical Society; fellow of the American College of Physicians; served during the World War; chief physician, obstetrician and president of the medical and surgical staff of the Windham Community Memorial Hospital; aged 62; died, April 1.

**Robert James Marshall**, East Liverpool, Ohio; Western Reserve University Medical Department, Cleveland, 1886; member of the Ohio State Medical Association; formerly mayor and member of the city council; on the staff of the East Liverpool City Hospital; aged 73; died, March 2, of cerebral hemorrhage.

**Frank Lester Todd**, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1891; member of the Medical Society of the State of Pennsylvania; fellow of the American College of Surgeons; member of the consulting staff of the Presbyterian and Allegheny General hospitals; aged 74; died, April 17, in the Conway (S. C.) Hospital, of pneumonia.



JAMES TATE MASON, M.D., 1882-1936

**Henry Strauss Wieder** \* Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1902; associate professor of otology, University of Pennsylvania Graduate School of Medicine; on the staff of the Northern Liberties Hospital; aged 54; died, April 22, of fracture of the fibula and pulmonary embolism following a fall.

**Charles Augustus Vosburgh** \* St. Louis; Barnes Medical College, St. Louis, 1904; member of the Radiological Society of North America; past president of St. Louis City Medical Society; served during the World War; formerly professor of clinical surgery and surgical pathology at his alma mater; aged 57; died, April 19, of heart disease.

**Earl Roach McCarthy** \* Chicago; Rush Medical College, Chicago, 1922; fellow of the American College of Surgeons; formerly clinical instructor in surgery at his alma mater; aged 40; on the staffs of the Cook County Hospital and the Presbyterian Hospital, where he died, April 21, of malignant nephrosclerosis and uremia.

**Harry Samuel Lane** \* Kansas City, Mo.; University Medical College of Kansas City, 1908; member of the Associated Anesthetists of the United States and Canada; medical director of the Fairmount Maternity Hospital; aged 60; was killed, April 14, in an automobile accident.

**Russell Ellis Minter**, Borger, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1926; member of the State Medical Association of Texas; past president of the Hutchinson County Medical Society; aged 36; died, March 18, of agranulocytosis.

**John Nevin** \* Jersey City, N. J.; University of the City of New York Medical Department, 1886; formerly medical director of the Jersey City Hospital; for many years police surgeon; aged 72; died, April 26, of cerebral hemorrhage.

**Henry William Norrish**, Logan, Kan.; Ensworth Medical College, St. Joseph, 1894; Missouri Medical College, St. Louis, 1895; member of the Kansas Medical Society; aged 66; died, March 15, of cardiovascular renal disease.

**Louis Maddock**, San Andreas, Calif.; Jefferson Medical College of Philadelphia, 1893; aged 67; died, March 25, in Stockton, of coronary occlusion, arteriosclerosis and injuries received when he fell down the stairs.

**James Claude Woodward**, Los Angeles; Lincoln (Neb.) Medical College of Coter University, 1900; aged 58; died, March 30, of carcinoma of the parotid gland with metastases to the liver, spleen and kidneys.

**Thomas Allen McCormick** \* St. Albans, Vt.; University of Vermont College of Medicine, Burlington, 1915; on the staff of St. Albans Hospital; aged 46; died, March 28, of a self-inflicted bullet wound.

**Edith Lyall Maddren Mosher**, Dupree, S. D.; National University Medical Department, Washington, D. C., 1899; aged 59; died, March 10, in Rapid City, of intestinal obstruction.

**Simon Leo Wissig**, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; aged 62; died, March 21, of chronic myocarditis.

**Albert Willis**, Metropolis, Ill.; St. Louis College of Physicians and Surgeons, 1904; member of the Illinois State Medical Society; aged 54; died, March 6, of diabetes mellitus.

**Andrew Jackson Morris**, Newton, Ala.; Southern Medical College, Atlanta, Ga., 1887; member of the Medical Association of the State of Alabama; aged 73; died, March 15.

**Charles Louis Marotte** \* Trenton, N. J.; Georgetown University School of Medicine, Washington, D. C., 1930; aged 31; died, March 17, in St. Francis Hospital.

**Harold Everett Smiley**, Providence, R. I.; Harvard University Medical School, Boston, 1922; pathologist to the Charles V. Chapin Hospital; aged 45; died, March 27.

**Andrew Murphy Jr.**, Mohawk, N. Y.; University and Bellevue Hospital Medical College, New York, 1901; aged 58; died, March 15, of carcinoma of the rectum.

**Robert T. A. Nixon**, Brookfield, Wis.; Detroit College of Medicine, 1903; aged 57; was instantly killed, March 31, when his automobile was struck by a train.

**Clifton Horace Frizelle**, Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1889; aged 67; died, March 23, in Elgin, Ill., of arteriosclerosis.

**Emett Lucien Siver**, Chicago; Fort Wayne (Ind.) College of Medicine, 1884; aged 76; died, March 6, of carcinoma of the urinary bladder.

**Henry P. Hart**, Chicago; Rush Medical College, Chicago, 1891; aged 71; died, March 21, of chronic myocarditis.

## Correspondence

### INEFFICIENCY OF GARGLES

*To the Editor:*—In a communication published in *THE JOURNAL*, May 9, page 1679, Kaunitz criticizes—rightly, I think—the technic by which investigations of the efficacy of the “gargle” have been carried out. I fully agree with his conclusions.

Some ten years ago I investigated this question by having ten patients gargle with a solution of methylene blue after administration of atropine. An examination made immediately afterward showed that in no case had the fluid reached the tonsils, the posterior pharyngeal wall, the posterior part of the soft palate or the uvula. In most cases the dye stained only the anterior half of the soft palate. From this investigation I reached the conclusion that gargling was entirely useless as a method of introducing an antiseptic medication to the tonsil or pharynx.

H. M. WALKER, M.D.,  
145 Harley Street, W. 1, London, England.

### DIPHTHERIA WITH SCARLET FEVER

*To the Editor:*—In reading the communication of Dr. Alexander Zabin, in *THE JOURNAL*, May 2, page 1588, I was struck by his statement that “diphtheria coexistent with scarlet fever is about one in every ten thousand cases.” I had always considered it far more common.

While it is true that diphtheria complicating scarlet fever is not frequent during the first or even the second week of the disease, being usually a complication of convalescence and as such being referred to usually as “postscarlatinal diphtheria,” it is nevertheless a not uncommon complication at any stage. As a matter of fact, Schamberg and Kolmer state that in a series of 1,259 cases of scarlet fever in which routine throat cultures were taken before or after admission to the Philadelphia Hospital for Contagious Diseases 285, or 29.25 per cent, showed diphtheria-positive cultures. Certainly the coexistence of these two diseases cannot be regarded as a rare complication.

As for the statement that “the immunity conferred by toxin-antitoxin or toxoid is only relative and not absolute,” it is of course known that cases of diphtheria have occurred in children with negative Schick tests, although there is always the possibility of an error in technic in performing the test.

SANDOR A. LEVINSOHN, M.D., Paterson, N. J.

### TUBING FOR DRAINAGE OF THORACIC CAVITY

*To the Editor:*—In the Therapy of the Cook County Hospital (*THE JOURNAL*, May 16, p. 1728) I see that reference is made to the use of red rubber tubing in the drainage of spaces within the thorax, because it is opaque to x-rays and films can therefore be made for information and record.

The usual red rubber tubing, however, is too hard for safety in this part of the body, and for that matter in several other regions also. In the chest, which is in constant motion, the pressure and friction of a stiff tube has produced many serious complications; for example, hemorrhage, bronchial fistula extension of a suppurative process, and extension of infection to the mediastinum and its organs.

There is at least one form of red rubber tube which has not these disadvantages, but this is not radiopaque. A pro-

cedure which I think far preferable is to use tubes of soft, virgin gum, usually black, and when I wish to outline or otherwise observe the conditions within the drained cavity, I slip a small catheter or other opaque rubber tube through the drainage tube as far as may be necessary, and immediately after the x-ray exposure has been made it is withdrawn. This method is also preferable to the injection of opaque fluid into a drained cavity.

HOWARD LILIENTHAL, M.D., New York.

## Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

### DIETS FOR BOYS IN CAMPS

*To the Editor.*—A camp houses and feeds about 200 youngsters between the ages of 17 and 28. The ration allowance is a shade less than 50 cents a day. On this money it is possible to feed satisfactorily as far as quality and tastiness are concerned. The quantity also is sufficient. However, in winter the ration allowance does not permit the buying of any considerable quantity of fresh vegetables or other kinds of "roughage" and, as a result, the boys often suffer from constipation. Canned fruits and vegetables are available but the cooks, although thoroughly experienced and well qualified, do not seem to have the knack of preparing these in a sufficiently palatable way to overcome the urge for "meat 'n' spuds" on the part of the enrollees. Any suggestions you may make or any special cook book you may recommend will be greatly appreciated. I assure you. Would the limiting of the quantities of meat and potatoes on the table help sufficiently to warrant instituting the measure? Kindly omit name and address.

M.D., Michigan

**ANSWER.**—Young men between the ages of 17 and 28 require a varied diet, including fruits and vegetables. The fresh vegetables may be served raw or in salads. The canned vegetables may be used in soups, scalloped dishes and stews or baked with cheese. Young men as a rule like cheese. The canned fruits may be served with cake or with puddings, such as cornstarch or tapioca pudding. Cornstarch pudding topped with canned berries such as loganberries, strawberries or raspberries is a very popular dessert. Dried fruits, such as raisins or dates, may be cooked in with the breakfast cereal.

The October 1935 issue of *Scouting*, the Boy Scout magazine, has some excellent suggestions for camp menus "Large Quantity Cookery" by Richard and Trent (Boston, Little, Brown & Co) has many interesting recipes.

### SPINAL FLUID TEST FOR INFANTILE PARALYSIS

*To the Editor.*—In making a spinal fluid test for infantile paralysis, how is the test made? What does it show? How soon after exposure will it show? Is the test positive? What is the standard treatment at present? What is your opinion of the treatment of a young patient who was sick for three or four days? Paralysis developed, and a blood transfusion was given from the mother, who had never had infantile paralysis. No other treatment was given. About twelve hours later the patient was considered out of danger. Please omit name.

M.D., Washington

**ANSWER.**—When spinal fluid is obtained by lumbar puncture, the degree of pressure and the clarity are observed. For proper interpretation there should be an absence of traumatic blood.

Further examination of the spinal fluid should include a cell count on a hemocytometer to determine the number of cells per cubic millimeter. A Pandy test for globulin should be made and also a Ross-Jones test for albumin. In addition, a quantitative test (modified Folin-Wu) for sugar, which should be normal in poliomyelitis. A differential cell count must be done.

In poliomyelitis, the spinal fluid is usually under increased pressure and its transparency is about the same as with normal fluid. Lymphocytes predominate, from 90 to 95 per cent often, except in the very early stage of the disease. The total number of cells should exceed 10 per cubic millimeter in any case of poliomyelitis. Abnormalities in the spinal fluid will not allow exposure of the patient to infantile paralysis unless the patient contracts the disease. When symptoms of infantile

paralysis appear, the spinal fluid should show the customary signs.

The tests here described are regarded as reliable and confirmatory of clinical signs.

Usual treatment consists of absolute rest in bed, with spinal punctures for release of fluid as may be necessary to relieve intracranial pressure.

The intravenous administration of convalescent poliomyelitis serum (human) in quantities of from 50 to 100 cc is sometimes advocated. There is also antistreptococcus poliomyelitis serum (horse) on the market.

A conclusion drawn from the case cited would be misleading. Was the patient ever in danger? Under some circumstances blood transfusions are beneficial in poliomyelitis as in other infections. Adult blood even in those without a history of infantile paralysis often contains neutralizing substances which are presumably helpful in treating poliomyelitis by transfusion.

### REDUCTION OF GLARE IN OPHTHALMIC LENSES

*To the Editor.*—Kindly inform me whether there is any new type of glass being made for lens purposes which is designed to reduce glare, other than the usual soft light and other tinted lenses. Please omit name.

M.D., Wisconsin

**ANSWER.**—Glare is defined as "a blinding sensation caused by excessive brightness of light in the field of vision, by extreme contrast between a light source and its surroundings or by continued exposure of the eye to a light source" (National Encyclopedia). With that definition in mind it is obvious that all that any glass can do in reducing glare is to reduce the total intensity of light. This is accomplished by the usual tinted lenses, regardless of the trade name, the amount of absorption depending on the depth of the tint. On the other hand, certain supposedly irritating rays of various spectral length can be eliminated by absorption, depending on the character of the glass used. Thus one type of glass will absorb all the ultraviolet rays and, if the glass is thick enough, much of the violet end of the spectrum. In this type fall the Noviol, Hallauer and such. Again, another type will absorb infra-red rays and some of the visible rays at the end of the spectrum, notably the Crookes glass. A third type of very recent origin absorbs a greater percentage of the yellow or sodium waves than any of the other visible rays of the spectrum. This is accomplished by incorporating neodymium in the glass.

### TREATMENT OF SYPHILIS

*To the Editor.*—Would you please advise me what would be considered a satisfactory form of antisyphilitic treatment for the following classes of syphilitic patients: 1. Those with positive blood Wassermann and Kahn reactions in good physical condition. 2. Those with positive Wassermann, Kahn and spinal fluid reactions in good condition. 3. The foregoing in poor physical condition, i.e., those who are undernourished and weak or who have cardiovascular-renal complications. 4. Paucic individuals. 5. Senile patients with syphilis or those over 50 years of age. In each of these categories how long would you consider treatment necessary? (a) provided there is improvement, (b) provided there is no improvement? Would the presence of a psychosis due to syphilis necessarily alter the treatment given? Is aqueous solution of bismuth a satisfactory intermuscular preparation? Please omit name.

M.D., Florida

**ANSWER.**—1. In syphilitic patients with positive blood Wassermann and Kahn reactions, provided they are in good physical condition and show no involvement of the spinal fluid, Cooperative Clinical Group studies have shown that if continuous therapy is employed, alternating courses of neoarsphenamine, ten injections each, and intramuscular injections of a bismuth compound, ten each, for a series of three courses of each, followed perhaps for the next two years by two short courses of intramuscular injections of a bismuth compound a year, will take care of the patient nicely.

2. Syphilitic patients having a positive Wassermann and Kahn test and positive spinal fluid should probably undergo a course of malaria therapy, consisting of from ten to fifteen good chills, provided they stand it all right, after which the preceding therapy might be followed, using continuous, alternating courses of arsenicals and bismuth compounds for at least two years. What should be done after that will depend on the patient's condition and the laboratory examination.

3. Naturally, given a patient in poor physical condition, perhaps having cardiovascular renal complications, the situation is quite different. To be sure, it is difficult to know what is meant by cardiovascular renal complications. If the patient has cardiac syphilis the Cooperative Group, in a report about to be published, has shown that such patients should never have therapy started with an arsenical but should be treated



first with heavy metal for a period of at least three months, and at no time in cardiovascular syphilis should arsenicals in large doses be employed. If one is in any doubt as to the treatment of a patient of this sort, it probably would be well to get the advice of a colleague specializing in this type of work.

4. In dementia paralytica all patients should have a preliminary course of malarial therapy, from twelve to fifteen chills, following which the patients may be treated with alternating courses of arsenicals and bismuth compounds or, if examination of the eyegrounds has been made and the fields are found to be not contracted, it may be possible to use trypanamide, weekly injections being given over a long period. The Cooperative Group advises as much as from thirty to forty injections, provided no eye symptoms intervene. Following this, alternating bismuth and arsenical injections may be used, and, of course, potassium iodide should be employed consistently.

5. One would hesitate to say that a man of 50 years is senile. Many individuals are in vigorous condition at this age, and it might well be that they could receive the same treatment as patients in group 1. If one is dealing with an actual senile case, for example a man of 65 with syphilis, naturally it will be impossible to cure the patient's syphilis, and such an individual should be treated symptomatically, probably with potassium iodide, injections of a bismuth compound or mercury rubs.

In treating parietic patients with a psychosis, malaria should be employed if the patient is in good enough physical condition. Even in an advanced form of the disease, patients sometimes respond in a remarkable manner.

Aqueous solutions of bismuth are of value in cases in which the injections can be given at least twice a week. The great difficulty is that the physician uses an aqueous solution in an injection once a week and feels that he has exhibited enough bismuth to take care of the patient's syphilis. With an aqueous preparation of bismuth it is not possible to raise the level of bismuth in the blood stream to a therapeutic level through a single weekly injection. They must be given twice or three times a week. On that account, in ambulatory patients the physician will usually find it preferable to employ one of the bismuth suspensions; for example, bismuth salicylate or potassium bismuth tartrate. For the student desirous of going further into this problem we would recommend that he consult "The Modern Treatment of Syphilis," by J. Earle Moore, Springfield, Ill., Charles C. Thomas, 1933; "Modern Clinical Syphilology," by John H. Stokes, second edition, Philadelphia, W. B. Saunders Company, 1934, or the publications of the Committee on Research in Syphilis, which have been appearing in the last few years in *Veneral Disease Information*, a publication of the United States Public Health Service.

#### HORMONE TREATMENT IN DELAYED GROWTH

To the Editor:—Is a roentgenogram of one hand and forearm sufficient evidence on which to base the statement that a boy, aged 11 years, has the bone development of a boy of 7 or 8 years? Also is the statement that unless the boy has biweekly injections of 2 cc. of antuitrin (Parke, Davis & Co.) the bones will not grow properly a tenable one? Granted that an 11 year old has the bone development of a boy of 7 or 8 years what, if any, treatment more than proper diet, vitamins, and so on, is indicated? In the case in question there is no clinical evidence of any faulty bone development except that on the roentgenogram. Please omit name.

M.D., New Hampshire.

ANSWER.—In the absence of clinical evidence of faulty bone development in the case in question, it is assumed that the 11 year old boy under discussion is of normal height and weight for his age. There is a lack of information as to clinical observations on mental, sexual and other physical attributes of development. If it is assumed that all other clinical evidence of growth and development in the boy is normal, a roentgenogram of one hand and forearm would not be sufficient evidence for the statement that there had been a retardation in bone development. It is true that roentgen examination is a valuable aid in the study of growth, and a delay in the appearance of centers of ossification may be an index of general retardation in development. The hand has been chosen as the most satisfactory and useful portion of the skeleton to study bone development. In general it may be said that the infant at 1 year of age will show ossification of two or three carpal bones and that all the carpal bones should show centers of ossification at 6 years of age. Thus one may roughly estimate the age of the infant or child by the number of carpal bones ossified and by the degree of ossification. From a roentgenogram of the hand and wrist of an infant or child, one may estimate the approximate age of the individual. However, there is a fairly wide variation within the normal, and if growth and development are otherwise normal, as has been assumed in this case, it is probable that the roentgenographic evidence could be considered within

the lower limits of the normal range. In some conditions in which general growth and development are abnormal, a delay in ossification as shown by roentgenograms of the carpus will have diagnostic significance. Among such conditions may be enumerated congenital or acquired hypothyroidism, rickets and renal rickets, celiac disease, types of dwarfism such as the Lorrain type of infantilism, the ateliosis of Gifford, and the Paltauf type of dwarfism. Treatment in any given case will depend on the cause of the general retardation in development. In a case of delayed ossification due to avitaminosis, such as rickets, the treatment would consist in supplying vitamin D in adequate amounts. In the case of aspecific hormone deficiency, such as hypothyroidism, the administration of thyroid would be indicated.

#### OCCUPATIONAL HAZARDS OF CONCRETE INDUSTRY

To the Editor:—Will you please send me literature on the possible allergic manifestations from concrete and the ingredients of cement, as well as literature on occupational dermatoses that might arise from concrete making?

P. B. BRUMBY, M.D., Lexington, Miss.

ANSWER.—The raw materials of Portland cement vary slightly from plant to plant and from type to type. The basic material is limestone, to which may be added shale, clays, clinkers, silica sand, slag, hydrous aluminum silicate and gypsum. After the mixture has been calcined, the resulting compound is essentially a mixture of calcium silicates. The proportion of free alkali is low, being of the order of 0.2 per cent, but the calcium silicate itself may act as an alkaline irritant. On the addition of water, as in the making of the concrete mixture, the calcium silicates are modified so as to produce more free alkali as calcium hydroxide. It follows that concrete makers are handling a more hazardous material than is true for cement makers. In a cement plant employing about 743 persons, only thirty-seven cases of disabling skin disease of any character took place in a period of three years. Furunculosis was the principal skin disease observed (Thompson and others, "Health of Workers in a Portland Cement Plant," *Pub. Health Bull.* 176, 1928). A true allergic dermatitis following exposure to cement is open to question but has been described by Cohen and Ganot (*Bull. Soc. franç. de dermat. et syph.*, July 1931, p. 1135). Martial states that at least one third of workers handling lime and cement acquire "cementers' itch." Among cement makers a dermatitis has been found in finishers, packers and bag cleaners. Perspiration and other sources of wetness favor the occurrence of skin disorders. In some trades mechanical abrading has to be considered along with the chemical irritation. In addition to the acute dermatitis venenata, a variety of chronic manifestations are recognized, including deep fissures, nail splitting and friability, skin tautness, and ulcers invaded by fungi. The alkali content of cement and of concrete is uniformly accorded chief consideration as the cause of the skin involvement. Additional comment may be found in:

International Labor Office: Occupation and Health, Geneva, 1934.

Anstett, F.: Cementers' Itch, *Bull. Acad. de méd.*, Oct. 20, 1925, p. 902.

#### MULTIPLE IMMUNIZATION

To the Editor:—In the Dec. 28, 1935, issue of THE JOURNAL a question is asked regarding the use of Sauer's whooping cough vaccine. The answer states that active immunizations against pertussis, scarlet fever, diphtheria and smallpox should be separated, each from the others, by intervals of several months in order to prevent one from "conflicting with the other." As each such immunization is specific in nature, I am wondering about the mechanism of such conflict. If these several immunizations were all performed at the same time, or close together, would the immunity subsequently developed against each infection be less as a result of this conflict than if more widely separated? If so, does this same consideration exist when simultaneously immunizing children or adults against smallpox, typhoid fever and cholera?

CARR E. BENTEL, M.D., Medical Corps, U. S. Navy.

ANSWER.—There is no definite proof that concurrent pertussis and diphtheria immunization is undesirable. With between 10 and 15 per cent failures with authorized commercial pertussis vaccine it seems advisable to give the pertussis vaccine a chance, without further complicating matters. When there become available reports of a higher percentage of protection with the commercial vaccine, it would be of interest to try a series of several hundred simultaneous immunizations to determine whether immunity is so influenced. In the present state of our knowledge and experience, it does not seem advisable now to undertake simultaneous injections. Since it is rarely if ever necessary to crowd the various immunization procedures, it seems prudent to allow a sufficient time interval after each to insure the highest degree of immunity response.

## FOOD POISONING

*To the Editor:*—I have been treating a young married woman since July 1935 for a spastic colon. Although the condition was annoying, she was never in acute distress. About the latter part of December she ate a few slices of whole wheat bread and approximately four hours later was seized with violent, generalized abdominal pains accompanied by nausea, vomiting, and later diarrhea. About twelve hours later she appeared to be in a stage of shock with its usual manifestations. It required about a week's care to restore her to her original condition. It was discovered on the same day on which she ate the bread that, although apparently fresh, it contained a greenish, white velvety fungous growth inside the bread measuring about 2 inches long and half an inch wide. There is no doubt that the bread consumed had contained this growth. Kindly give me information concerning this form of food poisoning and any references you may have available. Please do not publish my name.

M.D., Pennsylvania

*ANSWER:*—While within the range of possibility, it is not likely that this was an allergic manifestation. The description is characteristic of acute food poisoning such as has been described for certain strains of staphylococci, of which Jordan and Burrows (*Am. Jour. Hyg.* 20:604 [Nov.] 1934) have recorded nine outbreaks; recently Dack, Bowman and Harger (*THE JOURNAL*, Nov. 16, 1935, p. 1598) described another. It is possible that the green mold was the cause, but unlikely, as other molds, including green ones, growing on bread have not been incriminated as food poisons although probably they are frequently eaten. One must remember, however, that mushrooms are distant cousins of such fungi. It would seem more likely that the food poisoning in this case was caused by some other organism and the most likely explanation, since the disability did not last longer than a week, is that one of the staphylococci was responsible.

## BURNS AND DIABETES

*To the Editor:*—Can you give me any information or references to the literature with regard to burns as a cause of diabetes?

Leo F. Schiff, M.D., Plattsburg, N. Y.

*ANSWER:*—Notwithstanding a considerable study of so-called instances of trauma in relation to the onset of diabetes, no case of burns as a cause of the disease is recalled. It is true that one boy developed diabetes two weeks following a severe sunburn and a physician told the mother that the pancreas was injured by the burn!

Burns as an etiologic factor in diabetes would appear to be unexplainable.

However, a mild diabetes can be made extremely severe by burns. Thus a woman, aged 66, with diabetes of seven years' duration, both of whose legs had been amputated for gangrene, upset a kettle of boiling water over her body while sitting in her wheel chair. She was unable to extricate herself. The following day vomiting began and on the fourth day she entered the hospital in diabetic coma. Although she recovered from the coma, she succumbed to the trauma resulting from the burn and the coma twenty-one days later. Three months before the accident, although her heart was fibrillating during a stay in the hospital, she was sugar free with carbohydrate 145 Gm., protein 50 Gm. and fat 76 Gm., and the fasting blood sugar was 170 mg. per hundred cubic centimeters without insulin.

## FACTORS AFFECTING VIABILITY OF SPERM

*To the Editor:*—In the paper on natural conception control by Dr. Latz in *THE JOURNAL*, Oct. 19, 1935, he discusses factors governing the periodicity in the fertility and sterility of women in part as follows (p. 1241): "1. The life of the sperm cell within the female genitalia is less than forty-eight hours. The most important factor influencing the length of the fertility of the spermatozoa in a harmful way is the body temperature within the vagina. The scrotum serves as a refrigerating apparatus for the testicles, keeping the spermatozoa at a temperature which is several degrees lower than that of the circulating blood." To one who is interested in the subject of fertility and sterility in animals, the question arises as to what effect, if any, the seminal vesicles may have in offsetting the so-called refrigerating action of the scrotum. So far as the lower animals are concerned, most of them have seminal vesicles which, it is understood, act as reservoirs for the collection of spermatozoa and spermatic fluid. From the location of the vesicles within the abdominal cavity, it would seem that the spermatozoa are there subjected to temperatures equal to those which would obtain in the vagina. If this is true and if the viability of the spermatozoa is affected adversely by such high temperatures, what may be said about the effect of the latter on the germ cells while they are in the seminal vesicles? Please omit name.

V.M.D., New Jersey.

*ANSWER:*—In answering the question as to the effect of the temperature in the vesicle or vagina on the spermatozoa it must be understood that, although a temperature a few degrees lower than the body may be necessary for spermatogenesis or the production of spermatozoa, the mature sperm cells can and do live at body temperatures that exist in the vagina or the

vesicles. The longer life of spermatozoa in the vesicle as compared with their short life in the vagina is due to more than one factor; in the first place the vesicle produces a secretion that activates or feeds the spermatozoa (this secretion is naturally absent in the vagina) and, secondly, the high bacterial content and often the acid reaction of the vagina are adverse factors for the life of the sperm cells.

## WASHING PERITONEAL CAVITY

*To the Editor:*—Bevan (*S. Clin. North America* 15:681 [June] 1935) advises in peritonitis the washing out of the general peritoneal cavity with physiologic solution of sodium chloride. Is there general agreement on the point that irrigation is advisable? I refer to the conception that irrigation removes plastic exudate and thus allows increased absorption of toxins by the peritoneum. Please discuss.

M.D., Pennsylvania.

*ANSWER:*—There is no general agreement on the point that irrigation of the peritoneal cavity in general peritonitis is advisable. There does seem to be agreement that there is value in removing fluids from the abdomen within the six hours subsequent to perforation, penetration or rupture of a hollow abdominal viscus. This can best be done by means of a suction apparatus. There is no objection to washing out the general peritoneal cavity during an operative procedure in which local contamination has occurred.

## DEODORIZED KEROSENE

*To the Editor:*—In *THE JOURNAL*, Nov. 2, 1935, p. 1455 in *Queries and Minor Notes*, deodorized kerosene was suggested in the treatment of scalp conditions. I have inquired at several places but no one seems to know where I can buy deodorized kerosene. I would appreciate it greatly if you could tell me where such a product is sold. Please omit name.

M.D., Massachusetts.

*ANSWER:*—The Welty Company, 337 Sigel Street, Chicago, markets deodorized kerosene. It has only a slight kerosene odor and is said to be much less inflammable than ordinary kerosene. Besides its skin stimulating qualities it is a cleansing agent, dissolving greases, waxes and resins. It also is a solvent of camphor, iodine, menthol, thymol and other substances.

## PAINFUL TONGUE

*To the Editor:*—A white woman, aged 68, has been complaining of a painful tongue for the past year. The majority of her foods seem peppery. The pain is intense, although there are occasional periods of remission. The surface of the tongue is smooth and red. There are no visible ulcerations. Her blood pressure is 240 systolic, 120 diastolic; red blood cells 2,750,000; hemoglobin 65 (Sahli); smear is normal; the urine shows albumin +++ with hyaline and granular casts. I have been treating her for the hypertension and anemia. Kindly advise as to treatment for sore tongue. Please omit name.

M.D., New York.

*ANSWER:*—A smooth, painful, red tongue in an elderly female associated with a hyperchromic anemia and a 1.5 color index is frequently seen in pernicious anemia.

Complete and careful blood studies should be performed. In addition, blood chemistry studies including nonprotein nitrogen, sugar, creatinine and serum proteins should be done. If the proteins are low, adequate intake should be provided. In addition, liver, either orally or parenterally, may be given. Diluted hydrochloric acid after meals may also be of value.

## ANTIEMETIC COMBINATION

*To the Editor:*—Zahorsky in his "Synopsis of Pediatrics" speaks at length of the use of milk of magnesia and a minute amount of phenol as an antiemetic. Could you kindly advise the exact amount of each substance? Please omit name.

M.D., Illinois.

*ANSWER:*—The addition of as small a quantity as 0.05 Gm. of phenol to a teaspoonful or tablespoonful dose of magnesia magma would constitute a suitable antiemetic combination.

## DOSAGE OF CHLORAL IN ECLAMPSIA

*To the Editor:*—In the 1935 supplement of volume XVIII of *Sajous' Cyclopedia of Medicine*, page 570, appears the following about eclampsia: "Patients who are very restless should be given chloral hydrate 20 Gm. (5 drachms) and sodium bromide 60 Gm. (2 ounces) by rectum." I never thought it was possible to give such a heavy dose of chloral and bromide. In my other medical books the largest dose prescribed in such cases is: chloral hydrate 4 Gm. (1 drachm) and sodium or potassium bromide 8 Gm., or 2 drachms.

OVILA BRIS, M.D., Coaticook, Que.

*ANSWER:*—There is an obvious error in this statement, as from 6 to 12 Gm. of chloral hydrate has produced death. The doses quoted as "largest doses" should be accepted as such.

## Medical Examinations and Licensure

### COMING EXAMINATIONS

#### STATE AND TERRITORIAL BOARDS

ALASKA: Juneau, Sept. 1. Sec., Dr. W. W. Council, Juneau.  
ARIZONA: Phoenix, July 7-8. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: *Basic Science*. Little Rock, Nov. 2. Sec., Mr. Louis E. Gebauer, 701 Main St., Little Rock. *Medical (Regular)*. Little Rock, Nov. 10. Sec., Dr. A. S. Buchanan, Prescott. *Medical (Eclectic)*. Little Rock, Nov. 10. Sec., Dr. Clarence H. Young, 207½ Main St., Little Rock.

CALIFORNIA: San Francisco, July 6-9, and Los Angeles, July 20-23. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 7. Sec., Dr. Haivey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: *Medical (Regular)*. Hartford, July 14-15. *Endorsement*. Hartford, July 28. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Medical (Homoeopathic)*. Derby, July 14. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: Dover, July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA: Washington, July 13-14. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

HAWAII: Honolulu, July 13-16. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.

IDAHO: Boise, Oct. 6. Commissioner of Law Enforcement, Hon. Emmitt Post, 205 State House, Boise.

IOWA: *Basic Science*. Des Moines, July 14. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.

MAINE: Augusta, July 7-8. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, July 14-16. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MONTANA: Helena, Oct. 6. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.

NEW MEXICO: Santa Fe, Oct. 12-13. Sec., Dr. Le Grand Ward, Santa Fe.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

OREGON: *Basic Science*. Corvallis, July 18. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Sec., Board of Medical Education and Licensure, Mr. Clarence E. Ackley, 400 Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 1. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

RHODE ISLAND: Providence, July 2-3. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Rapid City, July 21-22. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

UTAH: Salt Lake City, July 10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

WASHINGTON: *Basic Science*. Seattle, July 9-10. *Medical*. Seattle, July 13-15. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Bluefield, July 13. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

WISCONSIN: Milwaukee, June 30-July 3. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

#### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Parts I and II*. Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

#### SPECIAL BOARDS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination and review of case histories of Group B candidates will be held in various cities in the United States and Canada, Nov. 7. *Applications must be filed at least sixty days prior to the examination.* Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. *All applications and case reports must be filed sixty days before date of examination.* Address, 122 So. Michigan Ave., Chicago.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Cleveland, Jan. 9. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: New York, Sept. 25-26. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 29-30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Cleveland, Sept. 25-27. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

### California Reciprocity and Endorsement Report

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports 30 physicians licensed by reciprocity and 3 physicians licensed by endorsement from Feb. 6 through April 2, 1936. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of California Medical School.....	(1934)		Washington
University of Colorado School of Medicine.....	(1934)		Colorado
American Medical Missionary College, Chicago.....	(1900)		Mass.
Loyola University School of Medicine.....	(1933)		Illinois
Northwestern University Medical School.....	(1929)		Ohio

University of Illinois College of Medicine.....	(1918), (1920)	Illinois
State University of Iowa College of Medicine.....	(1933)	Iowa
Tulane University of Louisiana School of Medicine.....	(1934)	Louisiana
Baltimore Medical College.....	(1909)	New York
Johns Hopkins University School of Medicine.....	(1906), (1933)	Maryland,
(1926) Minnesota		
Harvard University Medical School.....	(1928)	Wisconsin
Detroit College of Medicine.....	(1907)	Michigan
University of Minnesota Medical School.....	(1929), (1932)	Minnesota
St. Louis University School of Medicine.....	(1932)	Missouri
Creighton University School of Medicine.....	(1933)	Utah
University of Nebraska College of Medicine.....	(1919)	Nebraska,
(1925) Illinois		
Columbia Univ. College of Physicians and Surgeons..	(1930)	New York
Long Island College Hospital.....	(1929)	New York
Long Island College of Medicine.....	(1931)	New York
New York University, University and Bellevue Hos- pital Medical College.....	(1931)	New York
University of Cincinnati College of Medicine.....	(1927)	Ohio
University of Pittsburgh School of Medicine.....	(1930)	Penna.
University of Wisconsin Medical School.....	(1929)	Oklahoma
Western University Faculty of Medicine, Ontario....	(1902)	New York
Regia Università di Napoli Facoltà di Medicina e Chirurgia .....	(1922)	Penna.

School	LICENSED BY ENDORSEMENT	Year Endorsement Grad. of
Rush Medical College.....	(1932)	U. S. Navy
Medico-Chirurgical College of Philadelphia.....	(1916)	U. S. Army
Woman's Medical College of Pennsylvania.....	(1921)	N. B. M. Ex.

### Alabama Reciprocity and Endorsement Report

Dr. J. N. Baker, secretary, Alabama State Board of Medical Examiners, reports 15 physicians licensed by reciprocity and 1 physician licensed by endorsement from Jan. 13 through April 20, 1936. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University College of Medicine.....	(1932)		Georgia
Emory University School of Medicine.....	(1933), (1934)		Georgia
Tulane Univ. of Louisiana School of Med.....	(1931), (1934)		Louisiana
University of Michigan Medical School.....	(1931)		Michigan
Washington University School of Medicine.....	(1930)		Missouri
Temple University School of Medicine.....	(1932)		S. Carolina
Memphis Hospital Medical College.....	(1904)		Tennessee
Univ. of Tennessee College of Medicine..	(1933, 2), (1934, 2)		Tennessee
Vanderbilt University School of Medicine....	(1928), (1934)		Tennessee

School	LICENSED BY ENDORSEMENT	Year Endorsement Grad. of
Columbia Univ. College of Physicians and Surgeons..	(1933)	N. B. M. Ex.

### South Dakota January Report

Dr. Park B. Jenkins, director, Division of Medical Licensure, reports the written and practical examination held in Pierre, Jan. 21-22, 1936. The examination covered 14 subjects and included 105 questions. An average of 75 per cent was required to pass. Three candidates were examined, all of whom passed. Three physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Boston University School of Medicine.....	(1934)		87
University of Minnesota Medical School.....	(1935)		84
St. Louis University School of Medicine.....	(1927)		85

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University School of Medicine.....	(1924)		Ohio
Northwestern University Medical School.....	(1924)		Michigan
University of Tennessee College of Medicine.....	(1934)		Tennessee

### Rhode Island January Examination

Mr. Robert D. Wholey, chief, Division of Examiners, reports the oral, written and practical examination held at Providence, Jan. 2-3, 1936. The examination covered 20 subjects and included 50 questions. An average of 80 per cent was required to pass. Four candidates were examined, 3 of whom passed and 1 failed. Two physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Harvard University Medical School.....	(1932)		88.9
Tufts College Medical School.....	(1934)		80
Hahnemann Med. College and Hospital of Philadelphia.	(1935)		85.4

School	FAILED	Year Grad.	Per Cent
Laval University Faculty of Medicine.....	(1934)		40

School	LICENSED BY ENDORSEMENT	Year Endorsement Grad. of
Harvard University Medical School.....	(1932, 2)	N. B. M. Ex.

## Book Notices

**Lobar Pneumonia and Serum Therapy, with Special Reference to the Massachusetts Pneumonia Study.** By Frederick T. Lord, M.D., Member of the Board of Consultation, Massachusetts General Hospital, and Roderick Heffron, M.D., Field Director, Pneumonia Study and Service, Massachusetts Department of Public Health. Cloth. Price, \$1. Pp. 91, with 11 illustrations. New York: Commonwealth Fund; London: Oxford University Press, 1936.

The authors of this manual have placed physicians and students in their debt by a succinct presentation of the elements of serum therapy for lobar pneumonia due to pneumococcus types I and II. They provide evidence of the success of serum therapy based on a study of more than 900 patients who were treated by 400 physicians. They are correct in stating that specific treatment in the hands of general practitioners presents a community problem because of the need for prompt typing and the provision of serum for those unable to afford it. The chapters cover the application of specific therapy to lobar pneumonia, etiology, factors influencing recovery, clinical diagnosis and selection of cases, the recognition of the pneumococcus type, antipneumococcus serum, administration of serum and dosage, serum reactions and their treatment, and the results of serum treatment. The procedures recommended are sound. The importance of studying cultures of the heart's blood or the brain of sputum-injected mice is not mentioned, though in some instances they are the first source of knowledge of the type. No method of gaging the adequacy of the dose of serum before clinical improvement or when invasion by an additional organism has occurred is described, though two are available: the presence of agglutinins in the patient's blood and the Francis test or the skin reaction to the specific carbohydrate. There are, as there must be in a subject that is developing, many points in which more experience will bring modification of opinion and practice. Warming serum above hand temperature may be a source of difficulty and should not be recommended.

**Lésions du pancréas et troubles fonctionnels pancréatiques: Diagnostic en clinique par l'épreuve à la sécrétine purifiée.** Par Marc Bolgert. Préface du Professeur G. Roussy. Paper. Price, 45 francs. Pp. 225, with 22 illustrations. Paris: Masson & Cie, 1935.

In this monograph Bolgert, working in the clinic of Professor Chiray and in the laboratory of Professor Roussy, reports the effect produced on the secretion of the pancreatic juice by the intravenous injection of purified secretin. After bile samples A, B and C have been secured according to the recognized Meltzer-Lyon technic, secretin is given. Trypsin and lipase are then determined in the clear secretion of the pancreatic juice. Eighty cases of various types of pancreatic disease were studied by this method and the results are presented. There are excellent illustrations of disease of the pancreas found in association with the cases under investigation. Thus, figure 15 is an illustration of a pancreas filled with calcified granules and in this case the volume of the juice after the secretin injection as well as the lipase and trypsin were reduced. A discussion of similar cases in the literature is included. In Bolgert's patient the fasting blood sugar was normal but subsequently advanced to a mild diabetic level. Following the injection of secretin the pancreatic response is immediate or occurs after a few minutes' delay. Fluid is collected from the duodenal tube every five or ten minutes and the volume noted. Its content in lipase and trypsin is determined. The secretion lasts for about twenty-five minutes but can be prolonged. It is then often mixed with gastric juice. Methods of the determination of lipase and trypsin are recorded. In normal cases the pancreatic response is immediate, and the volume of the juice excreted is much increased, reaching from 100 to 150 cc. in fifteen or twenty minutes and the lipase and trypsin are more than doubled after the injection. In abnormal cases the pancreatic response is delayed and there is a diminution of the quantity of the enzymes. Generally if there is a change in one ferment the other follows suit. In part I the book presents a comprehensive study of pancreatic symptomatology based on clinical, x-ray and pathologic methods. In part II the action of secretin, the technic of administration, the results of the test and its interpretation are described, and in part III func-

tional pancreatic disturbances as found in the course of various diseases of the pancreas, liver and gallbladder, and other states are touched on. It would appear that this monograph advances definitely the opportunity for learning the functional changes that are taking place in the pancreas and opens up methods that can be tried generally in the clinic to solve the diagnosis of conditions of a gland hitherto always difficult to investigate.

**A Guide to Psychiatric Nursing.** By F. A. Carmichael, M.D., Superintendent, Osawatomi State Hospital, Osawatomi, Kansas, and John Chapman, M.A. Second edition. Cloth. Price, \$2.25. Pp. 175, with 31 illustrations. Philadelphia: Lea & Febiger, 1936.

It is at once apparent that this book is the result of mature judgment. It had its inception in a course of lectures for the nurses in the Osawatomi State Hospital. The present edition is well written and the illustrations are excellent. It is intended especially for training the psychiatric nurse, which purpose it should serve with credit. The book is well arranged. The introductory chapter is on the history of psychiatry and it takes the student in an orderly manner through the various developmental stages of mental history. The chapter on definitions of mental disease is rather short and might better have been incorporated in one of the following chapters. The classification of mental diseases employed by the authors is one modified from that of Henderson and Gillespie. There is a short but excellent chapter on psychopathology which, however, may be a little difficult for the average student nurse to comprehend. The same may be said of the chapter on the etiology of mental disease. Chapter 10, which is given over to the symptomatology of mental disease, contains many practical bits of information for the nurse and, as the authors suggest, what they wish "to impress on nurses is the value of accurate and detailed observation." It is rather surprising that no more space is given to the discussion of encephalitis, mental deficiency, and some of the psychoneuroses, especially neurasthenia. The sane handling of patients is emphasized. As is stated in the preface, "above all, we stress the point that these unfortunates who have been committed to our care are human, neither wild beasts in some instances nor beasts of burden in others." Appendix A, which deals with hereditary factors in mental defects and disease, while appropriate, might just as well have been included in the chapter on etiology of mental diseases. Appendix B, which deals with a proposed modification of the present classification of mental diseases, seems a little profound for the average student nurse but might be referred to in the chapter on the classification of mental diseases. The book represents a new and refreshing method of presentation of its material. It contains many good references for collateral reading and, all in all, should be of considerable help in the teaching of psychiatry to nurses.

**Geopsyché: Die Menschenseele unterm Einfluss von Wetter und Klima, Boden und Landschaft.** Von Dr. Dr. Willy Hellpach, Professor an der Universität Heidelberg. Fourth edition of "Geopsychische Erscheinungen." Cloth. Price, 9.50 marks. Pp. 317. Leipzig: Wilhelm Engelmann, 1935.

The fact that Hellpach's book "Geopsyché" (the 1923 edition was published under the title of *Geopsychische Erscheinungen*) has reached a fourth edition must indicate a growing continental interest in the study of man as a creature of his environment; an interest in the patient as diseased because of maladjustment to the world about him. But Hellpach is not an environmentalist in the sense of the psychologist. For him, environment is the universe—more particularly the "airs, waters, places" on which Hippocrates built his structure. In the English speaking countries this point of view is still medically remote, though in the collateral sciences, in general biology, in zoology, in botany, a broader concept is forging ahead, if Livingston's evaluation is correct. This edition has been almost entirely rewritten and the material has been carefully selected, condensed and amplified. As it now stands it presents an excellent review of the interrelation of the environment and the psychic phenomena. Fundamentally Hellpach's interests relate to the effects of climate, in contradistinction to the immediate meteorological effects that are experienced as weather change, though even here the treatment is adequate. Diurnal rhythm, seasonal rhythm, the rhythm of the lunar cycle are all discussed, as are the effects of local geographic and geological differences. A whole section is devoted to the psychic effects of the landscape

on the individual and on the racial group. The psychologist and the psychiatrist interested in the wider aspect of his subject is presumably familiar with the previous editions; for the younger German reading members of these groups the new edition should prove interesting as well as useful.

**The Art of Ministering to the Sick.** By Richard C. Cabot, M.D., and Russell L. Dicks, B.D. Cloth. Price, \$3. Pp. 384. New York: Macmillan Company, 1936.

Dr. Richard Cabot has been for many years a leading clinician and teacher of scientific medicine. He has also been an eloquent exponent of the social side of medicine and the human side of illness. His books on *Physical Diagnosis and Facts on the Heart* have companion volumes in *What Men Live By* and *Social Service and the Art of Healing*. In this work he has as co-author a minister of the gospel. The theme that is developed is that in time of painful or incapacitating illness, even when the patient is knowingly rapidly approaching death, there is something more to be done than to try to work a cure or alleviate physical suffering. Encouragement and psychic therapy are helpful but may not go far enough. Religion has a place. Its comfort may be brought not only to the orthodox believer but to the backslider, the doubter, the agnostic or the frank disbeliever. This religion need not be, nor should it be, narrowly sectarian. Rightly handled it is helpful in restoring mental poise and happiness; it may have a wholesome effect on the physical ailment. This is the belief of the authors based on a rich experience, of which they give illustrative examples. Those who are interested in these features of medical practice—and all should be—will find here much food for thought and many helpful suggestions. The authors ask for specific criticism of certain views that they hold—some tentatively, perhaps. In a brief book notice it is hardly in place to express opinions, much less to advance arguments pro or con. The authors will no doubt welcome such criticism as helpful. It is to be hoped that many readers will offer this frankly asked for comment.

**Alimentación y dietética.** Por el Dr. Marlo Scheitngart, docente libre de patología médica de la Facultad de medicina de Buenos Aires. Paper. Pp. 583, with one illustration. Buenos Aires: Aniceto Lopez, 1935.

This appears to be a useful textbook on dietetics, containing as it does a good deal of information not only as to the more technical aspects of dietetics but also as to the more practical ones. The first chapters are on calorimetry, basal metabolism and the constitution and caloric values of the several foods. Then there are chapters on the feeding of children, pregnant women and the aged. Three chapters are devoted to a discussion of the problems of feeding as they apply particularly to Argentina. In the final third of the book the author gives practical details of the dietetic treatment of the several diseases in which dieting is most effective. In the last two chapters Scheitngart gives some advice about the preparation of foods for the sick, together with a number of recipes. The book can be recommended to physicians who read Spanish.

**La litiasis reno-ureteral bilateral.** (Estudio clínico e indicaciones en su tratamiento). Por el Dr. Pedro Cifuentes, cirujano-urólogo y decano-jefe del Hospital de la Beneficencia General. Paper. Pp. 83, with illustrations. Madrid: Grafica Universal, 1935.

Dr. Cifuentes has studied ninety-seven cases of reno-ureteral lithiasis in which operation was performed. The cases are carefully charted according to history, treatment and results. Some excellent plates are included as well as a fairly comprehensive bibliography. It is stated that the average incidence of bilateral renal lithiasis is 21 per cent, which seems to be an average figure, judging from the divergence of reports that may be found in the literature. When speaking of bilateral lithiasis, the author differentiates between medical and surgical bilateral lithiasis. The problem of medical bilateral lithiasis seems to have been discussed in other papers and is not treated in this work. His concept of bilateral lithiasis includes (1) renal lithiasis with surgical indications on both sides, (2) surgical stones on one side and stones with medical indications on the other, and (3) surgical lithiasis in one side with medical or surgical lithiasis ultimately appearing in the other kidney. The frequent association of bilateral lithiasis with urinary infection is noted, and this is considered one of the etiologic factors, as well as the influence of diathesis, alkalis, nutrition and

osteomalacia. Emphasis is placed on the importance of complete roentgen examination, including pyelograms and retrograde, intravenous and pneumoradiography before the operation is undertaken. The author recommends that the kidney with the best function be operated on first, thereby minimizing shock and restoring as much function as possible before the kidney with more serious involvement is treated. The cases have been carefully worked out and the author has presented his material convincingly.

**How the President, Thomas Jefferson, and Doctor Benjamin Waterhouse Established Vaccination as a Public Health Procedure.** By Robert H. Halsey, M.D. Presented Before the Section of Historical and Cultural Medicine, New York Academy of Medicine, March 14, 1934. History of Medicine Series, No. 5, Issued under the Auspices of the Library of the New York Academy of Medicine. Paper. Price, \$1. Pp. 58, with 3 illustrations. New York: The Author, 1936.

Historians in the field of medicine know that Dr. Benjamin Waterhouse was probably chiefly concerned with the introduction of smallpox vaccination into the United States. Few, however, have stopped to realize how significant was his experiment or the extent to which it concerned the nation as a whole. Dr. Robert Halsey has collected from many sources the details of this incident and he presents the story with numerous quotations of letters and papers, which give a good understanding of the situation. Few people realize the extent to which Thomas Jefferson was interested in these experiments and how significant was his influence in aiding the introduction of vaccination into this country. Without his help many years might have elapsed before it was recognized as an established public health measure.

**An Epitome of the Laboratory Diagnosis and Treatment of Tropical Diseases.** By Horace M. Shelley, F.R.F.P.S., M.R.C.S., L.R.C.P., Government Pathologist, Nyasaland, East Africa. Cloth. Price, 2s. 6d. Pp. 81. London: John Bale, Sons & Danielsson, Ltd., 1936.

This small pocket manual is too elementary and incomplete to assist the experienced physician in actual practice, and too indefinite and brief to assist the inexperienced physician. It omits much recent work in the field of its title; e. g., in the insufficient and poorly balanced discussion of the treatment of amebiasis, malaria, roundworms and sprue. The illustrations are of doubtful value as diagnostic aids. Dangers of drug toxicity are not evaluated; e. g., in the recommendation of emetine dosage and of acetarsone (stovarsol). The two short paragraphs on heat stroke are completely archaic. Careless and vague statements are found, as on page 22, where in the treatment of blackwater fever it is urged that the patient "be kept absolutely quiet in bed in a dorsal decubitus," . . . and "he should therefore perform his excretory functions in the prone position." Enough has been noted to show that the booklet is not satisfactory for the purpose designed in the title.

**Diet Manual of University Hospital, University of Michigan.** Prepared by the Department of Dietetics, University Hospital. Second edition. Cloth. Price, \$1. Pp. 85. Ann Arbor: George Wahr, 1935.

The material in this manual is approved by the Department of Medicine, Surgery and Pediatrics of the University of Michigan Hospital. It lists the routine diets, special modifications such as diabetic, ketogenic, low and high caloric diets, modifications of fibers, allergic diets, test meals and the special procedures used in pediatrics. The book is small, compact and useful.

**Endocrine Tumours, and Other Essays.** By Frederick Parkes Weber, M.A., M.D., F.R.C.P., Senior Physician to the German Hospital, London. Cloth. Price, 7s. 6d. Pp. 207. London: H. K. Lewis & Co., Ltd., 1936.

Any one interested in endocrine tumors should not be misled by the title, for a discussion of this subject occupies but thirty pages in the book and contains nothing new or worth while. A good idea of the character of the rest of the book may be gained from the subjects of a few of the essays: "change of air in young adult life and early middle age," "billiousness and bilious attacks, especially those induced in some persons by sea air," "regarding the 'stuff' of which dreams are made—the psychophysiologic basis of dreams." The author's style makes the book almost unreadable, there being but few pages that do not contain many parenthetical remarks. The essays are of no general interest. This book should have been distributed privately to the author's sympathetic friends.

**Those Were Good Days!** By Carl Ludwig Schleich. Translated by Bernard Miall. Cloth. Price, \$3.50. Pp. 280, with 9 illustrations. New York: W. W. Norton & Company, 1936.

Dr. Schleich is known primarily for his contribution to local anesthesia. More than 365,000 copies of his autobiography have been sold in the German edition. He writes with a fine sense of humor, and his story is especially interesting because it is a record of the days when German medical science meant much to all the world. It was a time without the sadness, the agitation of the revolution characteristic of German medicine today. In all those who loved the old Germany this book will evoke a sad nostalgia. Especially interesting are the pages devoted to the work of Paul Ehrlich as Schleich saw him.

**Pathologie digestive.** Par P. Harvier, professeur à la Faculté de médecine de Paris. Collection des Initiations médicales, publiée sous la direction du Dr A. Sézary. Paper. Price, 22 francs. Pp. 162, with 16 illustrations. Paris: Masson & Cie, 1935.

This is a primer for the student of gastro-enterology. The author discusses the subject in four chapters including motor, secretory and sensory disturbances and methods of examination. Emphasis is laid on the fact that all digestive disturbances are interrelated, and the divisions made are schematic for purposes of study. The more common disturbances are briefly but clearly treated, and illustrations are used to emphasize the more important diseases. The more complicated diseases are discussed briefly. The volume is easily read and should be of decided benefit to the young student.

## Bureau of Legal Medicine and Legislation

### MEDICOLEGAL ABSTRACTS

**Workmen's Compensation Acts: Silicosis Not an Occupational Disease.**—The workman, Pero, was employed as an attendant on a rock-crushing machine. During the course of his employment, he contracted silicosis and was awarded compensation for several months. About three years later, claiming that he was suffering from permanent partial or total disability, he instituted proceedings for further compensation and the district court entered judgment in his favor. The state treasurer, representing the state compensation fund, appealed to the Supreme Court of Wyoming.

The Wyoming workmen's compensation act provides, in part:

The words "injury and personal injury" shall not include injury caused by the wilful act of a third person directed against an employee for reasons personal to such employee, or because of his employment; nor a disease, except, as it shall directly result from an injury incurred in the employment.

It was contended that the workman was suffering from an occupational disease and that such a disease is not compensable under the Wyoming act. But, said the court, the workman in this case was not suffering from an occupational disease, as defined in *Victory Sparkler & Specialty Company v. Franks*, 147 Md. 368, 128 A. 635:

An occupation or industry disease is one which arises from causes incident to the profession or labor of the party's occupation or calling. It has its origin in the inherent nature or mode of work of the profession or industry, and it is the usual result or concomitant. If, therefore, a disease is not a customary or natural result of the profession or industry, per se, but is the consequence of some extrinsic condition or independent agency, the disease or injury cannot be imputed to the occupation or industry, and is in no accurate sense an occupation or industry disease.

In the present case, continued the Supreme Court, neither the workman nor his employer regarded the inhalation of the rock dust emanating from the crusher as dangerous. No precautions were taken to protect the workman against such an injury as occurred. No one suggested to him the need for any protection. It was by chance that he was stationed for his work in such a position that the prevailing air currents during the period of his employment blew the dust clouds constantly on

him. The exact date could be determined when he began to spit up blood as a consequence of the continued inhalation and cutting of sharp rock particles in his lungs. The time when the true character of his injury was discernible was equally determinable. There was, the court said, not a scintilla of evidence indicating that the injury suffered by the workman was the customary and natural result of the work in which he was engaged, nor was there any evidence that it was the usual result to be expected in working as he did during the period he was employed. There was no proof that any other workman, working under like conditions, ever suffered as did Pero. The record in the case, the court said, would not support a holding that the injury in question was an occupational disease. Whether the abnormal condition produced in the workman's lungs in consequence of the inhalation of the particles of rock dust is regarded as a disease or as a mechanical hurt, growing progressively worse, on account of the sharp particles retained in the lungs, it "directly" resulted, the court concluded, "from an injury incurred in the employment."

The award of compensation was therefore affirmed.—*In re Pero: Pero v. Collier-Latimer, Inc. (Wyo.)*, 52 P. (2d) 690.

**Optometry Practice Acts: Sufficiency of Notice of Revocation Proceedings.**—The West Virginia optometry practice act authorizes the board of optometry to revoke the license of a licentiate for "advertising, practicing, or attempting to practice under a name other than one's own." It further provides that in revocation proceedings "a statement of the charges against the holder thereof and a notice of the time and place of hearing shall be served upon such person." The board instituted revocation proceedings against Eddy and served a notice on him, containing the following:

You are hereby notified that the charges against you are that you are operating in violation of law; that you are operating through the Kay Jewelry, a corporation; that you have received from and are receiving from the Kay Jewelry a salary, purporting said salary to be a percentage of the payments made by certain customers whose names will be furnished to you upon request.

On receipt of this notice, Eddy instituted original proceedings in the Supreme Court of Appeals of West Virginia to restrain the board from proceeding further against him, contending that the notice served on him failed either to charge the violation of any law of the state or to set out any of the statutory grounds for which a license may be revoked.

The Supreme Court of Appeals was of the opinion, however, that the notice was sufficient fairly to inform Eddy of the nature of the misconduct for which it was proposed to revoke his license. He was advised by the notice that he was "operating in violation of law," and the particulars wherein he had violated the law were set out. The notice, in the opinion of the court, indicated on its face that the board accused Eddy of doing one of the acts which the optometry practice act made a cause for revocation; namely, "advertising, practicing, or attempting to practice under a name other than one's own." Furthermore, said the court, the legislature may constitutionally confer authority on the board of optometry to suspend or revoke a license.

The Supreme Court of Appeals accordingly denied Eddy the relief he sought.—*Eddy v. West Virginia Board of Optometry (W. Va.)*, 182 S. E. 870.

## Society Proceedings

### COMING MEETINGS

- American Physiotherapy Association, Los Angeles, June 28-July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.
- Montana Medical Association of Billings, July 8-9. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.
- National Medical Association, Philadelphia, Aug. 16-22. Dr. W. Harry Barnes, 1315 North 15th St., Philadelphia, Acting Secretary.
- Pacific Northwest Medical Association, Portland, Ore., July 8-11. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.
- Wyoming State Medical Society, Cody, Aug. 24-25. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.



## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

#### Alabama Medical Association Journal, Montgomery

5: 337-372 (April) 1936

Oxygen Therapy in General Practice. M. E. Smith, America.—p. 337.  
Some Moot Questions in Obstetrics. H. P. Hewitt, Chattanooga, Tenn.—p. 340.

\*Treatment of Secondary Muscular Disturbances with Aminoacetic Acid: Preliminary Report. S. R. Terhune and A. H. Green, Birmingham.—p. 343.

Pain and Its Relief. O. R. Grimes, Gadsden.—p. 346.

Alabama's Eighty-Nine Years of Medical Organization: Brief History of the Association. D. L. Cannon, Montgomery.—p. 348.

Eye Diseases of Interest to the General Practitioner. D. Burkhead, Opelika.—p. 356.

**Treatment of Muscular Disturbances with Aminoacetic Acid.**—Terhune and Green became interested in muscular disturbances secondary to primary disease conditions because so many patients were referred for orthopedic consultation. Up to the present time they have used aminoacetic acid in five such cases, which are reported. The patients' chief complaints were chronic fatigue and easy fatigability. Aminoacetic acid was given in doses of from 30 to 45 Gm. a day. There was great improvement in each patient. The conclusions are that: 1. Aminoacetic acid is most likely of value in cases of primary muscle disturbances. 2. There may exist a syndrome of secondary muscular disturbances in disorders with different clinical aspects. 3. Secondary disturbances in muscle metabolism are ameliorated by the administration of aminoacetic acid. 4. The influence of aminoacetic acid therapy is probably solely confined to muscle metabolism.

#### American Journal of Diseases of Children, Chicago

51: 765-1006 (April) 1936

\*Blood Picture After Splenectomy in Children, with Especial Reference to Platelets. Martha Wollstein and Katherine V. Kreidel, New York.—p. 765.

Values for Red Blood Cells of Average Infants and Children. E. R. Mager and Marjory I. Andresen, Denver.—p. 775.

\*Rapid Typing of Pneumococci by Neufeld Reaction Directly from Laryngeal Swabs from Infants and Children. Julia Vinograd, Rosa Lee Nemir and W. H. Park, New York.—p. 792.

Metabolism of Adolescent Girls: I. Basal Metabolism and Energy Exchange. C. C. Wang, Mildred Kaucher and Mary Wing, Cincinnati.—p. 801.

Infantile Tetany: Metabolic Study. J. B. Pincus and I. F. Gittleman, Brooklyn.—p. 816.

Respiration in Infancy: II. Study of Rate, Volume and Character of Respiration in Healthy Infants During Neonatal Period. Jean Deming, San Francisco, and J. P. Hanner, Atlanta, Ga.—p. 823.

**Blood Picture After Splenectomy in Children.**—Wollstein and Kreidel performed splenectomy in forty-four children for traumatic rupture in three, rheumatic disease in twenty, splenomegaly of undetermined origin in one, congenital hemolytic icterus in four, Cooley's anemia in eight and hemorrhagic thrombocytopenia in eight. The ages of the children ranged from 11 months to 12 years and 11 months. When there had been no preoperative diminution in the number of platelets, as in cases of traumatic rupture, rheumatic disease and congenital hemolytic icterus, there was no immediate increase after the operation; but an increase appeared toward the middle or end of the first week, rarely before the third day. In cases of hemorrhagic thrombocytopenia, in which the number of platelets had been much diminished, splenectomy was followed by an immediate rise in all but one instance. This rise was not maintained in a fatal case and was delayed in the case of a boy who has lived two and one-half years after operation. The peak was reached, as a rule, in the second postoperative week, and a level of 1,000,000 platelets per cubic millimeter

was maintained for a week or for several months. A fall in the reticulocyte count was characteristic of typical cases of congenital hemolytic icterus. In patients with Cooley's anemia, the response of the platelets was most irregular in onset, number and duration of the increase, and it was never as high or of as long duration as in the other groups. Increase in the number of nucleated red cells is characteristic in these cases. Operations other than splenectomy were not followed by any appreciable rise in the platelet count during the postoperative period of observation. None of the four control children showed an appreciable rise in the platelet count during the postoperative (nephrectomy, nephropexy and ureterotomy, exploratory laparotomy and herniorrhaphy) period of hospitalization or during the two months following discharge.

**Rapid Typing of Pneumococci.**—Vinograd and her collaborators compared the results of typing pneumococci from laryngeal swabs obtained from children and infants by the Neufeld technic with those obtained by inoculation of a mouse, using microscopic and macroscopic agglutination technics and examination of blood agar plates streaked with the original material. For the Neufeld procedure, the tube of broth containing the original material was centrifuged at high speed for from five to ten minutes to sediment the particles of sputum, pus cells and organisms. All but 1 or 2 drops of the supernatant fluid was decanted and retained for further use. A loopful of the sediment was mixed on a cover slip with two or three loopfuls of type-specific rabbit serum and a loopful of Löffler's alkaline methylene blue. The preparation was then examined as a hanging drop under oil for the swelling phenomenon. To facilitate typing, preliminary tests were made with grouped serums by both the Neufeld reaction and the microscopic slide agglutination method. Last, a dilution streaking was made of the original specimen on a blood agar plate to indicate the kind and also the approximate number of organisms present. The Neufeld reaction gave positive results for 100 of 106 patients. The results were called positive in the sense that either a type of pneumococcus was identified directly by the Neufeld reaction or pneumococci were not obtained by any method. The majority of results showed a high degree of correlation between the Neufeld test and the other methods of typing. By most of the methods a specific type of pneumococcus was determined. There were seven patients from whom type-specific pneumococci were obtained only by direct typing by means of the swelling phenomenon, the methods of inoculation of a mouse and the plate method revealing no pneumococci. In only six cases in which other methods disclosed a specific type did the Neufeld reaction fail to indicate a type. Direct typing by the Neufeld method has the advantage of speed over other methods by shortening the interval of typing from approximately six to twelve hours in a large proportion of cases in children to less than one hour.

#### American Journal of Medical Technology, Detroit

2: 81-120 (May) 1936

\*Laboratory Findings in Leukemic States. R. R. Kracke and Hortense Garver, Emory University, Ga.—p. 81.

Spirochaeta from Blood and Tissue Cultures of Diseased Chickens. E. Redowitz, Philadelphia.—p. 92.

Pathogenic Fungi: Studies from Two Fatal Cases. Fanny Bell Warnock, Champaign, Ill.—p. 98.

Cytology of Spinal Fluid. Phyllis Stanley, Newark, N. J.—p. 106.

**Laboratory Observations in Leukemic States.**—Kracke and Garver point out that recent research indicates that in leukemias of all forms heterophile antibodies are either absent or are found in low titers (generally but not necessarily below the normal level). This facilitates the differential diagnosis between certain forms of leukemia and infectious mononucleosis, which in the early stages are often clinically and hematologically identical. Leukemia may be excluded, but a low titer does not establish its existence. A titer of 1:128 in the absence of recent horse serum therapy and in the presence of suggestive symptoms almost invariably establishes the diagnosis of infectious mononucleosis. A titer above 1:128 is considered positive for this disease even if there is a history of serum injections, unless the patient has serum sickness (urticaria) at the time of examination or has only recently recovered from this condition. In severe cases the titer may reach

1:4,000. In a leukemia with a low cell count it is most important to be able to recognize the immature, blast forms and not confuse them with lymphocytes. The laboratory aids to this end should include careful morphologic study, peroxidase reactions, indophenol blue synthesis and studies on concentrated specimens of blood. The diagnosis of leukemia should never be made in a laboratory. This can be done only by the physician.

### American Journal of Psychiatry, New York

92: 1007-1246 (March) 1936

- Experimental Approach to Psychiatry. W. H. Gantt, Baltimore.—p. 1007.  
 Psychiatry In and Around St. Louis. L. B. Alford, St. Louis.—p. 1023.  
 Relation of Trauma to Mental Diseases. A. Myerson, Boston.—p. 1031.  
 Remarks Concerning Development of Applied Psychopathology. E. Stransky, Vienna, Austria.—p. 1043.  
 Bodily Organs and Psychopathology. S. E. Jelliffe, New York.—p. 1051.  
 Psychic Trauma in Etiology of Graves' Disease: Survey of Five Thousand Case Histories. I. Bram, Philadelphia.—p. 1077.  
 Problems of Convalescence and Chronic Illness: Preliminary Discussion. H. F. Dunbar, New York.—p. 1095.  
 Dante Gabriel Rossetti: Case: Psychologic Study of a Chloral Addict. L. J. Bragman, Binghamton, N. Y.—p. 1111.  
 Blood Fat Iodine Number: Presenting Experimental Basis for an Exact Differential Diagnostic Procedure. A. T. Brice, Palo Alto, Calif.—p. 1123.  
 Anticipations and Corroborations of Freudian Concepts from Nonanalytic Sources. A. A. Brill, New York.—p. 1127.  
 Neymann-Kohlstedt Diagnostic Test for Introversion-Extroversion as Applied to Delinquents. M. J. Pescor, Lewisburg, Pa.—p. 1137.  
 Fundamental Effects of Epileptogenic Agents on Central Nervous System. E. A. Spiegel and M. Spiegel-Adolf, Philadelphia.—p. 1145.  
 Functional Psychoses in Children: Analysis of Findings in Twenty Cases of Psychotic Children Studied at the Child Guidance Home. L. A. Lurie, Esther B. Tietz and J. Hertzman, Cincinnati.—p. 1169.  
 Heat Regulation in Dementia Praecox: Reactions of Patients with Dementia Praecox to Cold (Résumé of Findings). I. Finkelman and W. Mary Stephens, Elgin, Ill.—p. 1185.  
 Allergic Reactions in Mental Diseases. J. A. Beauchemin, Middletown, Conn.—p. 1191.  
 Psychotherapy of Adolescents. Florence Powdermaker, New York.—p. 1205.

### Journal of Thoracic Surgery, St. Louis

5: 337-452 (April) 1936

- \*Management of Bilateral Cavernous Pulmonary Tuberculosis: Bilateral Caseous Pneumonic Pulmonary Tuberculosis. P. N. Coryllos and G. G. Ornstein, New York.—p. 337.  
 Artificial Respiration by an Apparatus Which Permits Measured and Controlled Volumes and Pressures. W. Branower, New York.—p. 377.  
 \*Vagus and Its Relation to Surgery of Lung. L. O'Shaughnessy, London, England.—p. 386.  
 Acute Empyema Thoracis: Study of Healing and Pulmonary Reexpansion. H. A. Carlson, Minneapolis.—p. 393.  
 Diaphragmatic Hernia in Infants Under One Year of Age Treated by Operation. T. G. Orr and F. C. Neff, Kansas City, Kan.—p. 434.  
 Tuberculous Tracheobronchitis: Report of Case. P. D. Crimm and J. W. Strayer, Evansville, Ind.—p. 441.  
 New Thoracoplasty Screen. W. D. Thompson Jr., St. Louis.—p. 444.

**Management of Bilateral Cavernous Tuberculosis.**—Coryllos and Ornstein believe that no bilateral case should be considered hopeless and unsuitable for collapse treatment because of the fact alone that it is bilateral; even if only one lobe is still healthy, treatment should be instituted. In 238 cases of bilateral pulmonary ulcerative tuberculosis they could not induce pneumothorax or the cavities could not be collapsed because of the presence of adhesions. The additional application of intrapleural pneumonolysis and thoracoplasty was considered. The results obtained show that from 40 to 60 per cent of these patients, thus far considered hopeless, can be rescued and their sputums rendered persistently bacillus free. The severe restrictions for surgical treatment commonly applied today to these patients are not justified. Evidence is presented in favor of the conception that no case should be considered hopeless only because it is bilateral, even when bilateral pneumothorax did not succeed in collapsing the cavities. The importance of a modified technic of closed pneumonolysis is stressed and the efficiency of bilateral thoracoplasty in selected cases is insisted on. The surprisingly small amount of healthy pulmonary parenchyma necessary for continuation of moderately active life was a great aid in allowing the authors to collapse large areas of diseased lung successfully.

**The Vagus and Its Relation to Surgery of Lung.**—In the course of his experiments on laboratory animals on the relation of the vagus to lung surgery, O'Shaughnessy also made

observations on the sensitivity of the lung root in man. During an intervention on the thoracic esophagus, a patient whose general condition had remained good despite a wide exposure of the mediastinum manifested great distress as a separation of the esophagus from the left main bronchus was attempted. As soon as the attempt was abandoned the general condition returned to its former state, and recovery from the exploration was uneventful. In three cases the lung root was explored and a ligation of the pulmonary vein after the manner of Kerschner carried out. No cardiac or respiratory distress was observed except in one case, in which retraction of the heart by the hand of the assistant produced a marked but temporary bradycardia. In these cases a swab soaked in 15 per cent cocaine was applied to the area without harmful effects, but, in view of the author's experimental observations, some other method of local anesthesia will be adopted. During an operation for the open division of adhesions between the lung and the thoracic wall, the patient being anesthetized by N-methylcyclohexylmethylmalonylurea, he had occasion to observe that the region of the lung root was highly sensitive. The vagus is an important sensory nerve, and it is an advantage to prevent nociceptive impulses from passing along it. At the same time, blocking of the vagus stem is not a safeguard against reflex disturbances while operating in especially sensitive regions, such as the lung root; respiratory reflexes are certainly abolished, but cardiovascular reflexes remain. Safety can be attained only by a local infiltration of the operative field. Total spinal anesthesia in man proved a satisfactory anesthetic for some operations on the chest wall, such as thoracoplasty, but it was not used in any operation on the lung. Experimental results suggest the trial of total spinal anesthesia for intrathoracic operations.

### Maine Medical Journal, Portland

27: 63-82 (April) 1936

- Ectopic Pregnancy, with Analysis of Thirty-Eight Cases Occurring at the Maine General Hospital During Past Six Years. W. F. W. Hay, Portland.—p. 67.  
 \*Auricular Fibrillation Associated with Apoplexy. O. C. Perkins, Brooklyn.—p. 70.  
 The First Mate's Yarn About Bosun's Patient, Told by Him to the Surgeon in the Sick-Bay of the S. S. "Dartagnan." S. P. Warren, Portland.—p. 74.  
 The Physician in National Defense. G. M. Ekwurzel, Boston.—p. 75.

**Auricular Fibrillation Associated with Apoplexy.**—In a study of more than 1,000 cases of apoplexy Perkins observed that one out of every eleven admitted to the hospital had auricular fibrillation. Although many of these patients had been treated previously for heart disease or hypertension, it was quite impossible to determine the status of the cardiac condition just prior to the cerebrovascular accident. Early in the intensive study of patients with apoplexy it was noted that in many instances the auricular fibrillation disappeared before digitalization was attempted. In five cases of hemiplegia, a careful history showed that the acute onset was typical of coronary thrombosis. There was a complete necropsy performed in three of the cases in which death occurred from coronary thrombosis. The cerebral condition was typical of embolism, involving branches of the middle cerebral artery. In the cases of cerebral infarction from embolism due to intracardiac thrombosis, it is difficult to determine the origin of the embolus, when auricular fibrillation is present. No one condition or single set of circumstances can explain the development of auricular fibrillation in all cases. Three possibilities are suggested: (1) disruption of the normal processes of conduction within the auricles as a result of some pathologic change in the muscle fibers, (2) alterations in the metabolic activities of the heart and (3) alterations in the nervous influences, especially conditions of increased vagal tone. Any one or all three elements may be responsible in a given case. These patients generally belong to one of the following groups: the chronic cardiovascular-renal type, generalized arteriosclerosis or senile heart of the paroxysmal type associated with hypertension. If a careful history of the onset of the vascular accident is obtained, it is noted that it occurred during physical activity or exertion, a condition which favors an increase in the cardiac arrhythmia and predisposes to embolism instead of thrombosis. The clini-

cal picture presented by the patient is that of an infarction rather than hemorrhage. The immediate care of these patients should be placed in the hands of the internist, as the problem of greatest importance is the treatment of the crippled heart. The repair of the cerebral infarction as well as the favorable prognosis depends on the improvement in the general circulation, which is governed by the cardiac status. When the patient has improved sufficiently to be discharged from the hospital, he should be instructed as to the importance of the observation and care of his cardiac condition in order to prevent, as far as possible, its recurrence.

### Medical Annals of District of Columbia, Washington

5: 89-122 (April) 1936

- Malignant Diphtheria: Report of Eight Cases Terminating in Death and One Case Treated Early and Efficiently with Recovery. Plea for Efforts Toward Prophylaxis, Early Diagnosis and Adequate Treatment. D. L. Weinstein, Washington.—p. 89.
- Certain Clinical Aspects of Vitamin B Deficiency. G. L. Weller Jr., Washington.—p. 93.
- Proctoscopic Findings in Ulcerative Lesions of Rectum and Pelvic Colon. G. W. Ault, Washington.—p. 96.
- Fundamentals of Internal Medicine: Diseases of Nervous System. A. Schneider, Washington.—p. 101.

### New England Journal of Medicine, Boston

214: 763-814 (April 16) 1936

- Progress in Recognition of Congenital Heart Disease. S. McGinn and P. D. White, Boston.—p. 763.
- Increase in Coronary Disease and Its Cause. F. P. Denny, Brookline, Mass.—p. 769.
- Clinical and Pathologic Study of One Hundred and Fifty Cases of Tubal Pregnancy. B. Tenney Jr., Boston.—p. 773.
- Congenital Absence of Vermiform Appendix in a Patient with Mental Disease. L. W. Darrach, East Gardner, Mass.—p. 776.
- Occurrence of Allergic Reactions in Arthritic Patients. A. G. Young, Boston.—p. 779.
- \*Congo Red for Control of Bleeding. R. C. Graves and C. J. E. Kieham, Boston.—p. 782.
- Method of Applying Temporary Adhesive Support to the Back. T. H. Peterson, Boston.—p. 783.
- New Instrument: An Antiadhesion Pneumothorax Needle. C. Floyd, Boston.—p. 785.

**Congo Red for Control of Bleeding.**—Graves and Kieham call attention to the use of congo red as a hemostatic agent. They have employed it for the relief of bleeding in renal injury, bilateral renal and ureteral calculi, chronic pyelonephritis, vesical calculus, benign hypertrophy of the prostate, tumor of the bladder, urethral trauma and the like. There have been no untoward effects in any instance, following the injection of 5 cc. of congo red (1 ampule of a sterile isotonic solution) or 10 cc. given intravenously. This may be repeated if necessary. Rossak states that occasionally patients complain of palpitation and lower abdominal pain, but the authors have not observed such disturbances. Even the accidental paravenous injection of the dye has resulted in no ill effect other than a persistent red discoloration of the skin. Congo red has been found to be most useful in cases of acute bleeding in individuals who still possess at least a relatively normal coagulation mechanism, and less effective in such chronic persistent bleeding as often occurs from pyelonephritis or malignant tumors of the urinary bladder. Whether its lack of success under such circumstances is due to local or general causes is not known. Obviously it will be of little or no value in actual blood disease. The authors have used it as a prophylactic agent following prostatectomy and transurethral resection, when unusual bleeding has been encountered. Some of their colleagues have administered it with marked success in severe epistaxis and hemorrhage after tooth extraction.

### New Jersey Medical Society Journal, Trenton

33: 187-244 (April) 1936

- Acute Hematogenous Osteomyelitis. B. F. Buzby, Camden.—p. 193.
- Clinical Interpretation of Jaundice. V. Knapp, Asbury Park.—p. 202.
- Prophylaxis of Communicable Diseases. M. L. Ripps, Elizabeth.—p. 205.
- \*Cardiac Dyspnea: Its Early Treatment with Mercurial Diuretics. L. Levin, Trenton.—p. 208.

**Cardiac Dyspnea.**—Levin points out that, since failure of the left side of the heart with its dyspnea, râles and dulness is nothing more than an obvious dropsy of the lungs (water

retention), its proper treatment should include the use of diuretics. Because results have not been consistent with the use of oral diuretics, he has recently been using salyrgan and, to a lesser extent, mercupurin (the sodium salt of trimethylcyclopentane-dicarboxylic acid-methoxy-mercury-allylamide-theophylline) intramuscularly. The use of mercurial diuretics is indicated in early left ventricular failure when the signs and symptoms continue after a reasonably short period of rest and digitalis therapy, and, if urine output continues to fall much below liquid intake in spite of thorough digitalization, the patient is headed for generalized failure. The contraindications may be said to be renal and gastro-intestinal. Severe nephritis is a definite contraindication. The intravenous use of salyrgan or mercupurin is almost impossible when mercurial diuretics are required over a period of months or longer; therefore the intramuscular route has been chosen as best fitted to meet the therapeutic requirements of most patients. The anterolateral aspect of the thigh rather than the gluteal region is the site of choice, particularly in a bedridden patient. An injection of 1 cc. is followed on the third day by 2 cc., provided no gastro-intestinal or renal dysfunction develops. This dosage is maintained only as long as it remains effective. When it is noted over a period of from two to four days that the net water balance is unfavorable, the dosage is raised to 4 cc. The frequency with which injections are repeated depends on the status of the water metabolism. The patient is asked to chart his liquid intake and output. The former is usually limited to not more than 1,500 cc. When the level of the urinary output falls below the intake, another mercurial injection is needed. The measurements are continuous and give the clue to each succeeding treatment. Gradually, in favorable cases, the interval between injections increases as the efficiency of the kidney improves. A maintenance dose of 4 cc. once a month is generally sufficient to keep the heart well compensated. In most cases it has been deemed unwise to risk a relapse by ceasing entirely the use of the diuretic. The prolonged use of acid salts as an adjunct in the diuretic treatment of left ventricular failure has not proved satisfactory. The use of from 6 to 10 Gm. of an ammonium salt soon renders all food unpalatable and may produce nausea and vomiting. The additional quantity of urine excreted by the use of these salts has not been significant enough to warrant their routine use.

### Northwest Medicine, Seattle

35: 119-162 (April) 1936

- Specific Immunization in Treatment of Chronic Infections. M. J. Fuendeling, Twin Falls, Idaho.—p. 119.
- Influence of Modern Psychiatry on Medical Thought: Psychobiologic Interpretation of Neurovegetative Syndromes with Presentation of Case Material. A. W. Hackfield, Seattle.—p. 127.
- Exposure of Infants to Tuberculosis and Tuberculin Test. J. A. Myers, Minneapolis.—p. 134.
- Physical Examination of Chest. G. Van Scoyoc, Los Angeles.—p. 137.
- Common Forms of Heart Disease: Their Recognition and Treatment. W. H. Holmes, Chicago.—p. 142.
- Lymphogranuloma Inguinale. W. R. Jones, Seattle.—p. 148.
- Local Anesthesia in Obstetrics. F. J. A. Ditter, Yakima, Wash.—p. 150.

### Pennsylvania Medical Journal, Harrisburg

39: 473-560 (April) 1936

- Recent Advances in Surgery of Pancreas. A. O. Whipple, New York.—p. 473.
- Pancreatic Enzyme Studies: Comparison of Some Methods of Trypsin Estimation. M. I. Stein, Harrisburg.—p. 478.
- \*Role of Infection and of Disturbed Cholesterol Metabolism in Gallstone Genesis. H. L. Bockus, J. H. Willard and H. N. Metzger, Philadelphia.—p. 482.
- Indications for Surgery in Gallbladder Disease. D. B. Pfeiffer, Philadelphia.—p. 489.
- Diagnosis of Neurogenic Bladder by Means of Cystometer. M. Muschat, Philadelphia.—p. 493.
- Etiology, Diagnosis and Treatment of Hydronephrosis. J. C. Birdsall, Philadelphia.—p. 497.

**The Genesis of Gallstones.**—Bockus and his associates analyzed the clinical and laboratory data that could be considered pertinent to the genesis of the common types of calculi in 156 cases of proved gallstone disease. The cases have been segregated into three groups, depending on stone types: pure

radiate cholesterol stones, calcium bilirubinate cholesterol (mixed) stones and pigment stones. A comparison has been made between the observations in the first two groups, particular attention being paid to an analysis of factors bearing on infection and disturbed cholesterol metabolism in gallstone genesis. It is concluded that gallbladder infection and cholecystitis probably do not play an important part in the genesis of the common mixed stone. Associated infection is more commonly observed in the calcium bilirubinate cholesterol stone group than in cases of the pure radiate cholesterol stone. Evidence is given which suggests that the concomitant inflammation of the gallbladder so frequently encountered results from rather than causes the deposition of stones. A mobilization of all available information fails to establish the mechanism by which a disturbance of cholesterol metabolism is responsible for the deposition of choleliths. However, the data submitted suggest that an alteration in cholesterol metabolism plays an important part in the genesis of both the pure cholesterol and the ordinary mixed gallstone.

### Public Health Reports, Washington, D. C.

51: 411-442 (April 10) 1936

History and Study of Leprosy in Hawaii C H Binford—p 415  
Dermatitis from Wrist Watch Straps L Schwartz—p 423  
Ornithodoros Parkeri, a New Species of Rodents R A Cooley—p 431

51: 443-492 (April 17) 1936

History and Frequency of Smallpox Vaccinations and Cases in Nine Thousand Families Based on Nation-Wide Periodic Canvasses, 1928-1931 S D Collins—p 443

### Southern Surgeon, Atlanta, Ga.

5: 91-176 (April) 1936

Ocular Manifestations of Intracranial Tumors A C Woods, Baltimore—p 91  
Secondary Inguinal Hernia with Bilateral Indirect Inguinal Hernia J Venable and H Blincoe Emory University, Ga—p 115  
Surgical Treatment of Duodenal Lesions J S Horsley, Richmond, Va—p 120  
Common Bile Duct Obstructions J D Highsmith, Fayetteville N C—p 130  
\*Surgical Measures for Prevention of Gas Gangrene G A Caldwell, Shreveport, La—p 141  
Edmund Strudwick, Surgeon II A Royster, Raleigh N C—p 153

#### Surgical Measures for Prevention of Gas Gangrene—

During the last two years at the Shreveport Charity Hospital and in his private work, Caldwell has encountered nineteen cases of gas gangrene of the extremities with ten deaths. The nine patients who lived escaped death only by the sacrifice of limbs. A careful review of the case records reveals the probability that, with proper management eight of the ten deaths might have been prevented and six of the nine amputations might have been avoided. This mortality rate, compared with 48.5 per cent during the World War and from 7 to 32 per cent as shown by several reports during recent years in civil practice, indicates that some fundamental surgical principle is being violated. Correct surgical principles for the prevention and control of gas gangrene were carefully worked out during the World War, and these have not changed. The whole difficulty is that these principles have been forgotten or that a new generation of surgeons has grown up who are not sufficiently impressed with their importance. In discussing the surgical measures for the prevention and treatment of gas gangrene, the author reviews briefly the bacteriology and pathology of the disease. Thorough exposure and removal of all damaged muscular tissue rob the bacillus of its culture mediums and if the wounds are left wide open, such anaerobes as may remain cannot gain a foothold because of the presence of oxygen. The author states that, had these measures been faithfully applied in the nineteen cases presented, the deaths might have been reduced to two or less, and the amputations to at least three on the patients who recovered. Instead, however, the debridements almost invariably were followed by culture of the wounds with subsequent development of gas gangrene and the amputated stumps were closed with fatal results. Perfringens antitoxin is a valuable prophylactic and therapeutic adjunct but in no way displaces proper surgical measures.

### Texas State Journal of Medicine, Fort Worth

31: 735-808 (April) 1936

Diagnosis of Early Syphilis W Spiller, Galveston—p 740  
Treatment of Syphilis S Cooper, Abilene—p 742  
Preventive Measures Against Syphilis J W Bass, Dallas—p 745  
Malaria Treatment of Paretic Cases T H Cheavens, Dallas—p 747  
Diagnosis and Treatment of Persistent Occipitoposterior Positions C L King, New Orleans—p 751  
\*Massive Abdominal Hemorrhage from Ruptured Corpus Luteum Cyst C Jones, Wichita Falls—p 755  
Filtration at Different Depths for Maximal Effects in Roentgen Therapy R G Giles, Temple—p 757

#### Hemorrhage from Ruptured Corpus Luteum Cyst—

Jones reports three cases of massive abdominal hemorrhage from ruptured corpus luteum cyst. In each instance there was excruciating pain in the lower part of the abdomen near the midline. This pain lasted from two to twenty minutes and then was followed by from thirty minutes to one hour of complete absence of any symptoms at all. Then followed, in regular sequence, first a generalized tenderness in the lower part of the abdomen, next a rigidity of the muscles more marked on the affected side, next abdominal distention, and then the usual symptoms of shock, which follow hemorrhages. There was no nausea or vomiting until hypodermics were used, but two authors report the presence of nausea. The cervix appeared to be normal, the uterus was normal in size and freely movable, in the tubo-ovarian areas there seemed to be some tenseness but very little resistance and no distinct tender areas. The accompanying pressure on the abdominal wall seemed to elicit far more tenderness than the vaginal observations justified. The abdomen presented rigidity of the muscles, distention, first confined to the area below the umbilicus and later to the upper part of the abdomen. There was a dull flat note on percussion. The blue umbilicus was not noticed. The general symptoms, such as fainting, pallor, sweating and rapid pulse, are the usual chain seen in hemorrhagic shock. The differential diagnosis brings to mind (1) ectopic pregnancy, (2) appendicitis, (3) traumatic rupture of a viscus and (4), in one case, ruptured gallbladder. It would seem that appendicitis could be ruled out and possibly traumatic rupture, and it truly seems that the confusion with gallbladder disease would be far fetched in most cases, but the author does not see how the possibility of ectopic pregnancy could be excluded before operation. There is little need for a differential diagnosis between these two entities, as the operative indication is the same. The patients' ages were 22, 24 and 28. Not more than six hours elapsed from the onset of the first symptom to the time of operation in two of the cases yet there was more than three pints of liquid blood and half that much of clotted blood in the abdomen in each case. None of the patients gave a history of any serious menstrual disorders. The hemorrhages occurred at various times during the menstrual month, one, five days after a normal period, one, sixteen days, and the third, twenty one days. The main point in diagnosis is that, if a case presents many of the symptoms of an ectopic pregnancy but the classic bulging mass is absent on vaginal examination, it should be remembered that massive hemorrhage can occur from a graafian follicle or a corpus luteum cyst, and immediate steps should be taken to handle the case as one of abdominal hemorrhage from any cause.

### Virginia Medical Monthly, Richmond

63: 65-130 (May) 1936

Cancer Control W Clarkson and A Barker, Petersburg—p 65  
Factors in Maternal Mortality T J Williams, University—p 68  
Remarks on Diagnosis of Coronary Thrombosis B P Seward, Roanoke—p 74  
Cesarean Section in Richmond, Va H H Ware Jr, Richmond—p 82  
Diagnosis of Early Syphilis E E Barksdale and D C Smith, Charlottesville—p 87  
Thyroid Control in Cardiac Therapy C Smith, Baltimore—p 91  
Vascular Surgery Necessitated by Trauma J L Rawls, Norfolk—p 94  
Acute Small Bowel Obstruction Study of One Hundred Cases H J Warthen, Richmond—p 99  
Dermatosis and Cold Weather R Kimbrough, Norfolk—p 104  
Very Satisfactory Operation for Pterygium N H Turner, Richmond—p 106  
Neisserian Smears from Prostate and Seminal Vesicles Final Report W M Bowman, Petersburg—p 107

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Journal of Physical Medicine, London

10: 205-226 (April) 1936

- Brief History of Electrotherapy. W. J. Turrell.—p. 207.  
Heliotherapy and Actinotherapy: Past, Present and Future. A. P. Cawadias.—p. 211.  
Infra-Red Radiation in General Practice. W. A. Troup.—p. 215.  
Role of Electricity in Therapeutics. E. P. Cumberbatch.—p. 216.  
Treatment by Heat: Natural and Artificial Sources. M. B. Ray.—p. 219.  
Review of Electromedical Apparatus. B. D. H. Watters.—p. 222.

## British Medical Journal, London

1: 625-678 (March 28) 1936

- Some New Drugs and Remedies. E. W. Adams.—p. 625.  
Erythrocytosis. E. D. Telford and H. T. Simmons.—p. 629.  
The Problem of Suicide. C. S. Read.—p. 631.  
Trachomatous Conjunctivitis. A. F. MacCallan.—p. 635.  
Spontaneous Hematoma of Abdominal Wall. R. Mailer.—p. 637.  
Rat-Bite Fever from a Kitten. A. F. Cole.—p. 638.  
Rat-Bite Fever from a Cat. J. V. Laverick.—p. 639.

## Journal of Laryngology and Otology, London

51: 141-212 (March) 1936

- Some Impressions That Remain. A. L. Turner.—p. 141.  
Some Remarks on Gradenigo's Syndrome and Petrositis (Including Consideration of Nine Cases and an Analysis of Seventy-Eight Recorded Cases). R. B. Lumsden.—p. 150.

## Lancet, London

1: 643-700 (March 21) 1936

- Medical Problems in Mineral Metabolism. R. A. McCance.—p. 643.  
\*Virus Etiology of One Form of Lymphocytic Meningitis. G. M. Findlay, N. S. Alcock and Ruby O. Stern.—p. 650.  
Idiopathic Dilatation of Stenson's Duct. R. T. Payne.—p. 655.  
Primary Intrahepatic Carcinoma of Bile Ducts. R. Binning.—p. 656.  
Fistula in Ano. J. P. Lockhart-Mummery.—p. 657.  
Case Showing an Unusual Relationship Between Asthma and Epilepsy. Kathleen Costello and J. T. Fox.—p. 660.

**Virus Etiology of Lymphocytic Meningitis.**—Findlay and his associates isolated a virus from the cerebrospinal fluid of two patients suffering from obscure nervous symptoms associated with an increase of lymphocytes in the cerebrospinal fluid. The virus inoculated intracerebrally into monkeys, mice, rats and guinea-pigs causes a fatal infection: post mortem there is intense infiltration of the meninges, choroid plexus and ventricles with round cells. When inoculated intraperitoneally into mice, the virus causes no symptoms but remains for some weeks in the spleen and kidneys. It is excreted in the urine of mice and can pass through the lightly scarified skin. A similar virus has been isolated from apparently healthy mice. The human and mouse strains isolated in this country behave in animals in the same way as the American virus described by Armstrong. Serums from human cases in this country contain immune bodies to the American virus and to the English mouse strain virus. There is thus evidence that this virus infection is widely spread on both sides of the Atlantic. The evidence here brought forward shows that a virus infection is present in mice and possibly also in rats and that this virus can be communicated to man. The exact port of entry in human cases has not yet been determined, but judging from analogies with infection by *Leptospira icterohaemorrhagiae* it is likely to be the skin or mucous membranes.

## Medical Journal of Australia, Sydney

1: 351-384 (March 14) 1936

- Recent Progress in the Art and Science of Medicine. L. J. J. Nye.—p. 351.  
\*Control of Bleeding in Nose and Throat Operations. R. G. Brown.—p. 359.  
Laboratory Investigation of Suspected Psittacosis. F. M. Burnet.—p. 363.

**Control of Bleeding in Nose and Throat Operations.**—Brown discusses the physiology of blood coagulation and the theoretical methods of its control. Accepting a prothrombin deficiency as the causal factor in hemophilia, the various lines of treatment of deficiency in blood coagulation fall into three groups: (1) the introduction of normal prothrombin from some

foreign source, (2) the introduction of any of the other coagulative elements, thus increasing the coagulability by the law of mass action, and (3) the introduction of some foreign substance in the hope of stimulating more rapid coagulation. Some of the most commonly used coagulating substances are discussed. The blood clotting time may be estimated in one of several ways, and the method selected is not so important as one's familiarity with a particular method and the use of that method only. An average of five minutes is taken as a safety mark and may be considered normal. Perhaps the simplest method of estimation is by the capillary tube. The estimation of the bleeding time is of more value than the clotting time. Normally the bleeding time should be from two to three minutes. The author stresses three points which he feels are not as commonly recognized as their importance deserves: 1. Faulty technic is the commonest cause of postoperative bleeding. 2. Bleeding not infrequently appears coming from beneath a clot. It is essential to remove this clot before one can successfully deal with it. Removal of the clot by wiping off in bleeding from a tonsil bed or, in bleeding from a nose, by washing out the clot or sometimes by simply blowing out the clot, may cause cessation of bleeding by allowing clots to form in the ends of the bleeding vessels. 3. Placing the patient in an upright position after a nose or throat operation is a big factor in the prevention of bleeding from small veins, which are the vessels mainly responsible. In such a posture the patient's blood pressure may be decreased; the "tone" of the cut ends of the vessels is increased, thereby more readily aiding constriction. Moreover, there is less pressure of venous blood above the bleeding points.

## Practitioner, London

136: 349-540 (April) 1936

- Boils and Carbuncles. J. Fraser.—p. 350.  
Infections of Face and Lips. P. H. Mitchiner.—p. 367.  
Whitlows and Infections of the Hand and Fingers. N. C. Lake.—p. 376.  
Modern Methods in Treatment of Burns. W. C. Wilson.—p. 394.  
Infections of the Foot and Ingrowing Toenail. A. W. Kendall.—p. 404.  
Minor Injuries to Muscles and Joints. W. E. Tucker.—p. 415.  
\*Sprains and Strains. C. B. Heald.—p. 422.  
Minor Surgical Affections of Skin. A. D. Wright.—p. 429.  
Minor Surgery of the Breast. R. M. Vick.—p. 438.  
Minor Gynecologic Surgery. A. C. Bell.—p. 445.  
Minor Surgery of Childhood. T. T. Higgins.—p. 454.  
Short Anesthesia for Minor Surgery in Children. H. Sington.—p. 468.  
Minor Injuries of Eye. F. W. Law.—p. 474.  
Minor Oral Surgery. A. L. Spencer-Payne.—p. 484.  
Traumatic Orchitis and Hematocele. G. E. Neligan.—p. 496.  
Injection Treatment: Supplement to Surgery. D. Levi.—p. 500.  
Local Anesthesia in Minor Surgery. A. L. Abel.—p. 509.  
Favorite Prescriptions: XVI: The National Hospital for Nervous Diseases, Queen Square. D. Brinton.—p. 520.

**Sprains and Strains.**—Heald gives rules for the treatment of delayed recovery cases of strains and sprains. 1. Injured parts that are persistently painful on waking after they should normally be well, which ease up during the day, require general treatment or elimination of a focus of infection. 2. Injured parts worse on getting warm in bed and waking patients about 5 a. m. should be treated for gout, whatever the family history. 3. Injured parts that are free and painless at all times and with all movements except one have a critical adhesion and will repay mobilization. 4. Injured muscle groups that develop residual spots of pain, which on being touched radiate this pain, have an adhesion of a nerve, and only special technics, such as galvano-acupuncture, are of any use. 5. Parts remaining persistently thickened and boggy long after they should have recovered are suggestive of a gonococcal basis. The practitioner is urged therefore to give his sprains and strains, on the day of injury if possible, the simple direct current or to send the patient to the technician with a fully detailed prescription.

## South African Medical Journal, Cape Town

10: 167-206 (March 14) 1936

- Our Association. W. Russell.—p. 169.  
Biblical Medicine. B. Weinreb.—p. 172.  
Conservative Treatment of Intracranial Trauma. A. Radford.—p. 180.

10: 207-246 (March 28) 1936

- Treatment of Acute Retention of Urine. V. Vermooten.—p. 209.  
Some Aspects of the Native in Disease. L. S. Williams.—p. 213.  
Disease in Non-European Patients. H. L. Heimann.—p. 215.  
The Association in Natal. C. J. Albertyn.—p. 217.

## Journal de Médecine de Lyon

17: 197-244 (March 20) 1936

- Ophthalmoscopic Signs of Arterial Hypertension: Their Variations in Course of Evolution of "Hypertensive Disease." P. Bonnet and G. Bonamour.—p. 197.
- Neuropapillitis from Neurotropic Virus. P. Bonnet, J. Dechaume, P. Wertheimer, L. Paufigue and E. Blanc.—p. 213.
- \*Hyperthermic and Pallor Syndrome in Nurslings After an Operation. L. Genet.—p. 231.
- Modern Operation for Cataract: Total Extraction of Crystalline Lens. P. Bonnet and L. Paufigue.—p. 237.

**Hyperthermic Syndrome in Nurslings.**—Genet states that the so-called syndrome of hyperthermia and pallor is a rare but serious complication resulting from operations performed on infants. It is characterized by a progressive elevation of temperature, which develops five or six hours after the operation. The rise in temperature continues until it reaches 41 or 42 C. (105.8 or 107.6 F.) or even more and is accompanied by a marked pallor of the skin. Death may occur in less than thirty hours, but recovery is possible. The pathologic anatomy based on a few necropsies has revealed a constant sterility of blood and intact kidneys. There is, in fact, little that is abnormal in the pathology—nothing, in fact, to explain death. A probable pathogenesis is the irritation of the thermic centers, which are incompletely developed in the nursling. Such irritation is followed by a disturbance in the secretion or in the cycle of secretion of the cerebrospinal fluid at the level of the third ventricle. The medical treatment is to counteract the hyperthermia and to sustain the heart. Lumbar puncture has given good results in some instances.

## Presse Médicale, Paris

44: 521-536 (March 28) 1936

- Neutropism of Infectious Diseases. L. Rimbaud.—p. 521.
- \*Iliosacral Reticuloplasmocytomas. L. Sabadini, J. Montpellier and Chéchan.—p. 526.

**Iliosacral Reticuloplasmocytomas.**—Sabadini and his collaborators state that clinically the plasmocytoma at first invades the osseous medulla under the form of small tumors, which finally fuse. The invaded osseous tissue is quickly destroyed. Most frequently the tumors are multiple and distant from one another. The cranium may become perforated. In the vertebrae the plasmocytomas completely destroy one or more vertebrae and can invade the spinal canal. The onset is exceedingly insidious. Sometimes the tumor appears as a nodule about the size of a nut, an egg or a small mandarin. Occasionally the initial signs are facial paralysis or medullary compression. General examination of the patient is often negative. Examination of the urine is especially important in the diagnosis. In 80 per cent of their cases, Bence Jones protein is present. They conclude from their studies that the tumors are rare and that the origin of both the normal plasmocyte and plasma tumors is uncertain. In the case which they reported all the transition stages between the reticulocyte cell and the tumor-like plasmocyte were found. This naturally suggests the reticulocyte origin of these tumors. The matter, however, is not yet certain.

## Schweizerische medizinische Wochenschrift, Basel

66: 393-412 (April 25) 1936

- Tasks of Research on Climatic Conditions of Health Resorts in Switzerland. W. Mörikofer.—p. 393.
- \*Overestimation and Underestimation of High Mountains as Therapeutic Factor. R. Campbell.—p. 396.
- \*Morphologic Blood Changes After Physical Exertion in High Mountains. A. Jezler and A. Vischer.—p. 398.
- Balneologic After-Treatment of Surgical and Internal Diseases. J. Weber.—p. 400.
- Physical Therapy of Gastro-Intestinal Disturbances. H. Müller.—p. 404.
- Investigations on Biologic Action of Small Quantities of Radioactive Emanations in Ground Air in Region of Orselina, Above Locarno. H. Bodmer.—p. 409.

**Mountain Climate as Therapeutic Factor.**—Campbell discusses the physiologic action which high altitude exerts on the organism of a person who is accustomed to low altitudes. He says that the change to high altitude results in a change of reaction. He thinks that a sojourn at a high altitude is desirable for all disorders in which a change of reaction is desirable. However, whether induced by medicaments, by balneologic or climatologic methods or by other modes of stimulation, this change in reaction requires certain reserve powers

in the organism in order to be beneficial. Where such reserves are lacking, a favorable effect cannot be expected or the influence may even be harmful. Even the quiet sojourn in the high mountains makes greater demands on the organism of one accustomed to low altitudes. All life processes are intensified, a factor which, in case of reduced reactivity, may already have a curative effect. However, the high mountain climate should also increase the resistance by the systematic increase in exertion. Since the therapeutic effect of the high altitude climate is dependent on an adequate amount of reserves, it is contraindicated in decompensated circulatory disturbances and in states of extreme exhaustion of organic origin. However, the author denies that the high altitude climate is harmful for all patients with heart disease. Patients with compensated cardiac defects or with disorders of the cardiac muscle not only tolerate the high altitude climate but are favorably influenced by it. The intensification of the life processes at high altitudes occasionally intensifies formerly mild symptoms, so that obscure cases become suddenly clarified. Insufficient attention is given to the rôle of nicotine in acclimatization. He says that symptoms of nicotine poisoning develop more readily at high altitudes. He mentions that tuberculosis, bronchial asthma, neuroses, compensated circulatory disorders, hypertension, hypotension, mental exhaustion, and so on, are cured more rapidly than when the patient remains in low altitudes.

**Blood Changes After Exertion at High Altitudes.**—Jezler and Vischer studied the changes in the blood picture that appear after prolonged ski runs (from five to nine hours' duration) in the high mountains. They found that in general the changes in the white blood picture are not great. The increases never reach the values that are observed after prolonged ski runs at low altitudes. Erythropoiesis seems to be greatly influenced by exertion at high altitudes; however, the increase in mature erythrocytes is not proportional. The authors suggest that the increased functional requirements might reduce the life span of the erythrocytes. The specificity of the stimulus of high altitude is indicated by the number relations of the leukocytes, for here the reaction capacity seems to decrease with the higher altitude. In this connection, the authors cite other observers who observed entirely normal leukocyte values after exertions at altitudes of 6,000 and 7,400 meters.

## Rivista di Patologia e Clin. d. Tubercolosi, Bologna

10: 221-292 (April 30) 1936

- \*Monocyte-Lymphocyte Ratio in Pulmonary Tuberculosis. L. Bresci.—p. 221.
- Pulmonary Moniliasis: Case. F. Balestrieri.—p. 229.
- Pathogenesis of Tuberculous Hemoptysis from Clinical Point of View. I. Cornia.—p. 233.
- Hematogenous Pulmonary Tuberculosis in Children and Adolescents. E. Filla.—p. 242.
- Weltmann Reaction in Artificial Pneumothorax. Lydia Barsottelli and Dina Poggioni.—p. 257.
- Artificial Pneumothorax in Dispensaries. G. Rambelli.—p. 264.

**Monocyte-Lymphocyte Ratio in Pulmonary Tuberculosis.**—Bresci aimed at verifying the conclusions previously reported as to the value of the monocyte-lymphocyte ratio in diagnosis and prognosis of pulmonary tuberculosis. He determined the monocyte-lymphocyte ratio in two groups of patients suffering from pulmonary tuberculosis of the benign and severe forms. The monocyte-lymphocyte ratio was low in the blood of patients of the first group at the first determination, and still lower at the following two determinations. The initial figures of the ratio never exceeded 0.4 in patients of this group. The ratio was high in the blood of patients of the second group at the first determination, and still higher at the following determination. The initial figures were never under 0.5. Figures as high as 2 and 2.75 were obtained in grave cases. The author says that his results confirm the statements previously made in the literature as to the existence of a direct relation between the tuberculous process and the evolution of the monocyte-lymphocyte ratio. The blood mirrors the histocytologic evolution of the tuberculous process with an increased monocytosis and a decreased lymphocytosis in grave cases and the opposite monocyte-lymphocyte proportion in benign cases. The author emphasizes the diagnostic and prognostic value of the monocyte-lymphocyte ratio and the advantage of this procedure over the separate counting of these cells.



**Münchener medizinische Wochenschrift, Munich**

S3: 587-628 (April 10) 1936. Partial Index

- \*Cause of Death in Air Embolism. W. Pfanner.—p. 591.  
"Relapses" After Treatment of Varicose Veins. A. Vosschulte.—p. 593.  
\*Is Traumatic Ossifying Myositis the Result of Accident or of Treatment? L. Böhler.—p. 594.  
What Does Cod Liver Oil Bandage Accomplish in Cases of Emergency? P. Bosse.—p. 601.  
Foot Blisters and Their Treatment. W. Barthel.—p. 603.  
Contracture in Paralysis and Its Orthopedic Treatment. J. Schüller.—p. 606.

**Cause of Death in Air Embolism.**—Pfanner shows that, if air enters the heart and there comes in contact with blood, the rhythmic contractions of the heart beat the blood into foam. As the volume of the foam increases, the proper systolic contraction and evacuation of the heart become impossible. The heart can neither expel the foam nor compress it. Thus the heart has to handle a considerable excess load. The right side of the heart, with its relatively weak muscular apparatus, gradually weakens and death results from interruption of the circulation by paralysis of the right side of the heart.

**Traumatic Ossifying Myositis After Dislocation of Elbow.**—Böhler describes the history of a case of dislocation of the elbow that came under his observation four months after the injury. The elbow showed thickening and felt hard, and movement was greatly restricted. Roentgenoscopy disclosed extensive ossification in the region of the brachial and triceps muscles. The author asserts that he has seen many similar cases of dislocation of the elbow in which extensive ossification processes developed in muscles and ligaments. The after-treatment had been energetic in all these cases. He cites several authors who believe that ossifying myositis results from almost all dislocations of the elbow. In the author's own material of twenty-nine cases there were only three in which a mild form of ossifying myositis developed. He reduces the dislocation under local or general anesthesia by means of traction on the flexed elbow and then puts the arm into a plaster-of-paris cast reaching from the shoulder to the fingers. This cast is usually left on for three weeks. Immediately after the cast has been put on, active movements are made in the shoulder and finger joints. After the removal of the cast the elbow is always soft, whereas in case of massage treatment it is usually hard and thickened. The author advises that the after-treatment should consist only of active movements and that all other modes of treatment should be avoided. Two of his three patients in whom a slight ossifying myositis developed had been given massage treatment and the third patient had performed hard physical labor immediately after removal of the cast. The author observed ossifying myositis also in some cases in which the reduction had been done either in hyper-extension or several days after the injury. The author concludes that the ossifying myositis after pure dislocations of the elbow which are at once carefully reduced is not a result of the injury but rather of a mode of treatment in which massages and passive movements are begun early.

S3: 629-670 (April 17) 1936. Partial Index

- New Investigations on Pathology of Liver. W. Nonnenbruch.—p. 629.  
Course of Oxidation Processes in Animal Organism. F. Knoop.—p. 633.  
Is There a Hematopoietic Center in the Brain? G. Denecke.—p. 636.  
Histamine in Functional Examination of Lung. A. Heymer.—p. 638.  
\*Diagnosis of Multiple Myeloma with Aid of Sternal Puncture. H. Schulten.—p. 642.  
Insulin Therapy of Schizophrenia. H. Strecker.—p. 649.

**Diagnosis of Multiple Myeloma by Sternal Puncture.**—Schulten reports the clinical histories of two patients with multiple myeloma in which the diagnosis was made possible by sternal puncture. After emphasizing the importance of sternal puncture in cases of this nature, he stresses that observation of the fresh smear discloses that the typical myeloma cells do not resemble the myelocytes or the myeloblasts. Moreover, he is convinced that they are not one of the links in the developmental chain of the myeloleukocytes, erythrocytes or megakaryocytes and that they are not reticular cells. At first sight the cells resemble most closely the plasma cells, except that they are larger, the plasma is not quite so strongly basophil and the perinuclear transparency, the wheel-spoke nucleus and the capacity to be stained by specific dyes are lacking.

One who frequently inspects bone marrow pictures knows that such cells occur occasionally in healthy persons and in patients with other disorders. As a rule they are classified with the plasma cells. The author concedes that a similarity with the plasma cells cannot be denied, but he says that it has not been proved as yet whether a genetic relationship to the plasma cells exists. Until their origin has been explained, he advises the acceptance of Wallgren's suggestion to refer to them as "myeloma cells."

**Wiener medizinische Wochenschrift, Vienna**

S6: 397-424 (April 11) 1936. Partial Index

- \*Lift Reaction as Aura in Tumor of Temporal Lobe. H. Hoff and O. Pözl.—p. 397.  
Question of Tonsils. F. Fremel.—p. 399.  
Practical Hypocritism. B. Aschner.—p. 402.  
Treatment of "Static Dynamic Decompensation" by "Pelvic Lever" (Scissors Lever Principle). M. Jungmann.—p. 406.  
\*Pulsation of Normal and Varicose Veins of Extremities and Its Diagnostic Significance. R. Teufl.—p. 407.

S6: 425-452 (April 18) 1936. Partial Index

- Use of Anesthetic Methods by Practitioner. G. Lotheissen.—p. 425.  
Memorandum for Relatives of Diabetic Children. R. Priesel and R. Wagner.—p. 427.  
Resuscitation With and Without Apparatus. H. Hans.—p. 429.  
\*Lift Reaction as Aura in Tumor of Temporal Lobe. H. Hoff and O. Pözl.—p. 432.  
\*Pulsation of Normal and Varicose Veins of Extremities and Its Diagnostic Significance. R. Teufl.—p. 436.

S6: 453-480 (April 25) 1936. Partial Index

- Injurious Effects of Cosmetics. M. Oppenheim.—p. 453.  
Treatment of Diabetes: Use of Insulin and Urgent Measures. H. Dibold.—p. 457.  
\*Lift Reaction as Aura in Tumor of Temporal Lobe. H. Hoff and O. Pözl.—p. 461.

**Lift Reaction as Aura in Tumor of Temporal Lobe.**—Hoff and Pözl report the history of a woman, aged 39, who seven years previously had had her first epileptic attack. After that she had epileptic attacks three or four times each year, but during the last year they had become more frequent. The woman stated that before these attacks she frequently has the feeling of increasing in size, as if her head would reach the ceiling; at other times she has the feeling of going up in an elevator, followed by a feeling of going down again. These two types of aura recurred alternately. During the last year the patient has had frequent attacks of headache in the occiput, also nausea and vomiting. The authors found a reddish tumor on the first temporal convolution, but, since its limits could not be defined, only a portion of it was extirpated. The patient died twelve hours later. The necropsy revealed an infiltrating glioma in the anterior end of the right temporal lobe. Analysis of the manifestations of the aura reveals that they are in accord with the stretching phases of the lift reaction in quadrupeds (described by Magnus); that is, they are a reaction of the semicircular canals to progressive movements. Thus the aura had the character of a supravestibular disturbance.

**Pulsation of Veins of Extremities.**—Teufl found that a retrograde pulsation, and one which is somewhat retarded in comparison with the arterial pulse, of the normal veins of the upper and of the varicose veins of the lower extremities is a regular occurrence in organic as well as in relative tricuspid insufficiency, which in turn is unusually frequent in cardiac decompensation. The analysis of the venous pulse of the extremities, which, if done in profile illumination, is more readily accomplished than the evaluation of the pulsation of the jugular vein, and which in many cases is easier and more reliable than the palpation of the pulse of the hepatic veins, by the demonstration of its constancy and of its undiminished intensity permits the diagnosis of organic tricuspid insufficiency, independent of the compensatory condition of the heart, whereas its disappearance during the subsidence of the decompensatory manifestations indicates a relative muscular tricuspid insufficiency. The constant venous pulse which varies in intensity is an unfavorable prognostic sign of relative insufficiency of the tricuspid valve, whenever the decompensation cannot be influenced. In cases in which organic tricuspid insufficiency has been demonstrated, the weakening of the venous pulse of the extremities is a sign that the cardiac action is becoming weaker and indicates an unfavorable prognosis. Isolated pul-

sation of the varicose veins, which is largely dependent on the intra-abdominal pressure, and the respiratory phenomena which show a paradoxical behavior for the veins of the upper half of the body and predominate over the pulsatory manifestations, even if the pulsation is retrograde and retarded, militate against a tricuspid insufficiency and are to be traced to a direct or indirect central involvement. The surprising contradiction between a clearly retrograde venous pulse in the region of the upper extremity and a nearly absent pulse of the varicose veins, in the presence of abdominal stasis, is an important argument in favor of the difficult diagnosis of concretion or accretion of the heart. The absence of the venous pulse in the extremities, in patients with severe cardiac insufficiency and peripheral stasis, disproves dilatation of the right side of the heart and suggests a mechanical throttling of the venae cavae, which in turn might be caused by a pericardial exudate or by a space limiting mediastinal process. The penetrating venous pulse is the result of an especially high pulse pressure and, as a rare occurrence in aortic insufficiency, it is without clinical significance; but the retrograde venous pulse of the extremities is of considerable significance.

### Novyy Khirurgicheskiy Arkhiv, Dnepropetrovsk

35: 163-312 (No. 138) 1936. Partial Index

Organization of Campaign Against Cancer. A. A. Epshteyn.—p. 163.

\*Pathogenesis of Gynecomasty. D. G. Goldman.—p. 181.

\*Results with Parathyroidectomy for Ankylosing Polyarthrit. P. S. Fedorov.—p. 208.

Cancer of Cystic Duct. I. P. Levanyuk.—p. 215.

Rabl Method of Treatment of Rachitic Deformities of the Lower Extremities. A. I. Kogon.—p. 222.

Prolonged Intravenous Drop Infusion. K. G. Tagibekov.—p. 235.

**Pathogenesis of Gynecomasty.**—Goldman has collected seventy-two cases of gynecomasty among patients treated from 1925 to 1935 at the marine hospital of Kronstadt. Operation was performed in sixty-eight of these cases. Enlargement of both breasts was present in twelve (16.7 per cent). Pressure on the glands yielded a secretion in eleven. Pathologic alterations in the sexual sphere were present in sixteen (22.2 per cent). A female type of distribution of the suprapubic hair and a wide pelvis was present in eleven. The development of the sexual organs was normal in all but ten cases. Sexual function was normal in all save three cases, in which libido was diminished in two and absent in one. Trauma of the breast was an etiologic factor in six. The reaction of Manoiloff was made in twenty-eight cases and was found to be of the female type in twenty-six. The author found in his animal experiments that castration of males (rabbits) followed by transplantation of ovaries (from rabbits) caused a hypertrophy of the mammary glands. Parenteral introduction of solution of posterior pituitary produced a hypertrophy of the mammary glands in rats and white mice. Injections of ovarian or mammary extracts had no such effect. The author is of the opinion that the existence of an internal secretion of the mammary gland has not been demonstrated. Histologic studies point to the breast as a gland of external secretion. The author concludes that gynecomasty is frequently unaccompanied by any abnormality in the sexual sphere. There may exist hyposexuality and hypothyroidism in a number of cases. Histologic studies reveal a well developed glandular apparatus but no secreting cells.

**Parathyroidectomy in Ankylosing Polyarthrit.**—Fedorov reports 121 parathyroidectomies performed at the Mechnikov Hospital (Leningrad) from 1926 to 1932. Oppel suggested in 1926 that ankylosing polyarthrit is a disease of infectious origin characterized by inflammatory changes of the synovial membrane and the surfaces of the bones of a joint. He found that the blood calcium of patients suffering from this form of polyarthrit is increased above the normal and that the calcium deposited on the inflamed joints led to ankylosis. The condition is one of hypercalcemia, the opposite of the one found in tetany, which is characterized by hypocalcemia. Oppel formulated the theory that hyperfunction of the parathyroid tissue was the basis of the condition. He performed parathyroidectomies and found that the muscular stiffness, joint stiffness and pain were relieved. The disease affects preponderantly young men between the ages of 20 and 40. There were only two women in this series. The disease is characterized by a progressive involvement of the joints, the

vertebral column being the seat of predilection. The disease must be differentiated from deforming polyarthrit, in which ankylosis is due to exostoses of the vertebral bodies. The muscles become stiff and woodlike. Forty-eight patients of a group of ninety-three showed hypercalcemia. The immediate effects of the operation were the relief of pain and stiffness. This was observed in seventy-nine out of 121 cases. The operation advocated is a unilateral parathyroidectomy and hemistrulectomy. Eighty-four cases were followed up for periods ranging from three to seven years. Improvement was reported in thirty-nine, arrest of the process in nineteen and progression of the disease in seventeen. The best results were obtained in cases of pronounced hypercalcemia. There were no deaths due to tetany.

### Finska Läkarsällskapets Handlingar, Helsingfors

79: 195-294 (March) 1936

\*Studies on Granulocytopenia. B. von Bonsdorff.—p. 200.

**Granulocytopenia.**—Of von Bonsdorff's fifteen patients, four were men and eleven women, ranging in age between 18 and 67, the majority being between 40 and 50. Five of the cases were previously reported and ten are now presented. He says that nine cases were more or less probably the result of aminopyrine. In three of these, of which two were fatal, antisyphilitic treatment with neoarsphenamine and preparations of bismuth was probably the cause. In one the disorder is ascribed to roentgen treatment given for polyarthrit, and in two, one with chronic intermittent course, the other also with recurrence, the etiology is unknown. In several cases in which the disturbance lasted a long time there was in addition to the granulocytopenia a more or less marked anemia. Cytologic examination of the sternal marrow carried out in eight cases showed abundant myelocytes and myeloblasts in the three patients who recovered, while in three of the five fatal cases the picture was dominated by reticulo-endothelial cells, partly of plasma cell nature, and in two the punctate was deficient in cells and contained mainly lymphocytes, monocytes and erythroblasts. The outcome of the sternal puncture is of great value in judging the prognosis; the blood picture affords no certain guidance in this respect. One case was clinically regarded as "noma" and the author is of the opinion that the necrosis of skin and mucous membrane formerly connected with the conception of "noma" is mainly the result of a more or less marked reduction in granulocytopenia, and in certain cases with leukemic picture perhaps also to a qualitative deficiency in the granulocytes. The good results obtained in two of the earlier cases by energetic liver treatment were not duplicated in later advanced cases, but liver therapy still seems the most promising. He advises against roentgen therapy.

### Hospitalstidende, Copenhagen

79: 325-368 (April 7) 1936

\*Primary Cancer in Lung. E. Husted and Gerda Biilmann.—p. 325.

Polymorphic Prurigo Aestivalis Treated with Intravenous Injections of Gold Chloride. S. Lomholt.—p. 353.

Acute Myeloblastic Leukoses: Two Cases. H. C. and R. Rask-Nielsen.—p. 360.

**Primary Cancer of Lung.**—Husted and Biilmann's material comprises forty-one cases, from 1911 to 1934. From 1924 on they find an absolute and a relative increase in the number of patients with primary pulmonary cancer; from 1929 to 1933 pulmonary cancer appeared in between 1 and 2 per cent of all necropsies and in 7.3 per cent of all cancer cases. The etiology is uncertain. Two cancers developed in patients with chronic inflammations of the lungs. No relation was demonstrable between the frequency of pulmonary cancer and the more extensive tarring of roads. The disorder may be latent a long time, and in about one fourth of the cases pulmonary symptoms were absent. Only about one third were diagnosed during life. The authors emphasize the importance of roentgen examination, particularly supplemented by bronchography. The primary tumor is almost always found centrally in the lung in close relation to the bronchi, and the large majority of these tumors apparently develop from the bronchi. The form, size and extent are extremely variable and complications common. Histologically, all forms of cell types and tumor structure are seen. Metastases are frequent and usually extensive; metastases to the central nervous system often occur.

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MORRIS FISHBEIN, M.D.

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American Heart Journal. St. Louis.  
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\*American Journal of Diseases of Children. A. M. A., Chicago.  
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Deutsches Archiv für klinische Medizin. Berlin.  
Deutsche medizinische Wochenschrift. Leipzig.  
Deutsche Zeitschrift für Chirurgie. Berlin.  
Deutsche Zeitschrift für Neuroheilkunde. Berlin.  
East African Medical Journal. Nairobi.  
Edinburgh Medical Journal.  
Endocrinology. Los Angeles  
Finska Läkarsällskapets Handlingar. Helsingfors.  
Gazette Médicale de France Paris  
Glasgow Medical Journal.  
Guy's Hospital Reports. London  
Gynecologie. Paris  
Hospitalstidende. Copenhagen.  
Hygiea. Stockholm.  
Illinois Medical Journal. Chicago.  
Indian Journal of Medical Research. Calcutta.  
Indian Medical Gazette. Calcutta.  
International Journal of Psycho-Analysis. London  
Irish Journal of Medical Science. Dublin.  
Jahrbuch für Kinderheilkunde. Berlin.  
Japanese Journal of Experimental Medicine. Tokyo.  
Japanese Journal of Gastroenterology. Kyoto.  
Japanese Journal of Obstetrics and Gynecology. Kyoto.  
Journal of Alabama State Medical Association. Montgomery.  
Journal of Allergy St. Louis.  
Journal of Anatomy. London.  
Journal of the Arkansas Medical Society. Fort Smith.  
Journal of Bacteriology. Baltimore.  
Journal of Biological Chemistry. Baltimore.  
Journal of Bone and Joint Surgery. Boston.  
Journal de Chirurgie. Paris.  
Journal of Clinical Investigation. New York.  
Journal of Comparative Neurology. Philadelphia.  
Journal of Experimental Medicine New York.  
Journal of the Florida Medical Association. Jacksonville.  
Journal of General Physiology. New York.  
Journal of Hygiene. London.  
Journal of Immunology. Baltimore.  
Journal of the Indiana State Medical Association. Indianapolis.  
Journal of Industrial Hygiene and Toxicology Baltimore.  
Journal of Infectious Diseases Chicago.  
Journal of Iowa State Medical Society. Des Moines  
Journal of Kansas Medical Society. Topeka.  
Journal of Laboratory and Clinical Medicine. St. Louis.  
Journal of Laryngology and Otolaryngology. London.  
Journal of Medical Association of Georgia. Atlanta.  
Journal of Medical Society of New Jersey Trenton.  
Journal de Médecine de Lyon  
Journal of Mental Science. London.  
Journal of Michigan State Medical Society. Grand Rapids.  
Journal of Missouri State Medical Association. St. Louis.  
Journal of Nervous and Mental Disease New York.  
Journal of Neurology and Psychopathology. London.  
Journal of Nutrition. Philadelphia.  
Journal of Obstetrics and Gynaecology of British Empire. Manchester.  
Journal of Oklahoma State Medical Association. McAlester.  
Journal of Oriental Medicine Dairen, South Manchuria.  
Journal of Pathology and Bacteriology. Edinburgh.  
Journal of Pediatrics St. Louis.  
Journal of Pharmacology and Experimental Therapeutics. Baltimore.  
Journal of the Philippine Islands Medical Association. Manila.  
Journal of Physiology. London.  
Journal de Radiologie et d'Electrologie. Paris  
Journal of South Carolina Medical Association. Greenville.  
Journal of State Medicine. London  
Journal of Tennessee State Medical Association. Nashville.  
Journal of Thoracic Surgery. St. Louis.  
Journal of Tropical Medicine and Hygiene. London  
Journal of Urology. Baltimore.  
Kentucky Medical Journal. Bowling Green.  
Klinicheskaya Meditsina. Moscow.  
Klinische Wochenschrift. Berlin  
Lancet. London.  
Laryngoscope. St. Louis.

\*Cannot be lent.

- Lyon Chirurgcal.  
 Maine Medical Journal Portland.  
 Medical Annals of District of Columbia. Washington.  
 Medical Bulletin of the Veterans' Administration. Washington, D. C.  
 Medical Journal of Australia. Sydney.  
 Medical Press and Circular. London.  
 Medicine Baltimore.  
 Medizinische Klinik. Berlin.  
 Medizinische Welt Berlin.  
 Military Surgeon. Washington, D. C.  
 Minerva Medica. Turin.  
 Minnesota Medicine. St. Paul.  
 Monatsschrift fur Geburtshulfe und Gynakologie. Berlin.  
 Monatsschrift fur Kinderheilkunde. Berlin.  
 Münchener medizinische Wochenschrift. Munich.  
 Nebraska State Medical Journal. Lincoln.  
 Nederlandsch Tijdschrift voor Geneeskunde Haarlem.  
 New England Journal of Medicine. Boston.  
 New Orleans Medical and Surgical Journal.  
 New York State Journal of Medicine. New York.  
 Norsk Magasin for Lægevidenskapen Oslo.  
 Northwest Medicine Seattle.  
 Novyy Khirurgicheskiy Arkhiv Dnepropetrovsk.  
 Ohio State Medical Journal. Columbus.  
 Paris Médical.  
 Pediatria. Naples.  
 Pennsylvania Medical Journal Harrisburg.  
 Philippine Journal of Science Manila.  
 Policlinico (Pract Sect., Med Sect and Surg Sect) Rome.  
 Practitioner. London.  
 Prensa Médica Argentina Buenos Aires.  
 Presse Médicale. Paris.  
 Problemy Tuberkuleza. Moscow.  
 Psychiatric Quarterly. Albany, N. Y.  
 Psychoanalytic Quarterly. Albany, N. Y.  
 Public Health Reports Washington, D. C.  
 Puerto Rico Journal of Public Health & Tropical Medicine San Juan.  
 Quarterly Bulletin of Health Organisation of League of Nations Geneva.  
 Quarterly Journal of Medicine. Oxford.  
 Radiology. Syracuse, N. Y.  
 Review of Gastroenterology. New York.  
 Revue de Chirurgie. Paris.  
 Revue Française de Gynécologie et d'Obstétrique Paris.  
 Revista de Cirugía Buenos Aires.  
 Revista Española de las Enfermedades del aparato Digestivo Madrid.  
 Revista Médica Latino-Americana. Buenos Aires.  
 Revista de la Sociedad Argentina de Biología. Buenos Aires.  
 Revue Française de Pédiatrie. Paris.  
 Revue Médicale Française Paris.  
 Rhode Island Medical Journal. Providence.  
 Riforma Medica Naples.  
 Rinascenza Medica. Naples.  
 Rivista di Patologia e Clinica della Tuberculoze. Bologna.  
 Schweizerische medizinische Wochenschrift. Basel.  
 Science New York.  
 Semana Médica Buenos Aires.  
 South African Medical Journal. Cape Town.  
 Southern Medical Journal Birmingham, Ala.  
 Southern Surgeon. Atlanta, Ga.  
 Southwestern Medicine. Phoenix, Ariz.  
 Sovetskaya Khirurgiya Moscow.  
 Sovetskaya Vrachebnaya Gazeta. Leningrad.  
 Sovetskiy Vestnik Oftalmologii. Moscow.  
 Sovetskiy Vrachebnyy Zhurnal. Leningrad.  
 Strahlentherapie Berlin.  
 Surgery, Gynecology and Obstetrics. Chicago.  
 Svenska Lakarsallskapets Handlingar. Stockholm.  
 Texas State Journal of Medicine. Fort Worth.  
 Tubercle London.  
 Tuberculosis Rome.  
 Ugeskrift for Læger. Copenhagen.  
 United States Naval Medical Bulletin. Washington, D. C.  
 Upsala Lakareforenings Forhandlingar. Uppsala.  
 Vestnik Khirurgii Leningrad.  
 Virginia Medical Monthly. Richmond.  
 Voprosy Onkologii Kharkov.  
 Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.  
 West Virginia Medical Journal. Charleston.  
 Wiener Archiv fur innere Medizin. Vienna.  
 Wiener klinische Wochenschrift. Vienna.  
 Wiener medizinische Wochenschrift. Vienna.  
 Wisconsin Medical Journal Madison.  
 Yale Journal of Biology and Medicine. New Haven, Conn.  
 Zeitschrift fur Geburtshulfe und Gynakologie. Stuttgart.  
 Zeitschrift fur Hygiene und Infektionskrankheiten. Berlin.  
 Zeitschrift fur Kinderheilkunde. Berlin.  
 Zeitschrift fur klinische Medizin. Berlin.  
 Zeitschrift fur Krebsforschung. Berlin.  
 Zeitschrift fur Tuberkulose. Leipzig.  
 Zentralblatt fur Chirurgie. Leipzig.  
 Zentralblatt fur Gynakologie. Leipzig.  
 Zentralblatt fur innere Medizin. Leipzig.



## SUBJECT INDEX

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The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "ME," Medical Economics; "ab," abstract; the star (\*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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## SOCIETIES

- Acad—Academy  
Am—American  
A—Association  
Coll—College  
Conf—Conference  
Cong—Congress  
Cont—Convention  
Dist—District  
Hosp—Hospital  
Internat—  
International  
M—Medical  
Med—Medicine  
Nat—National  
Phar—  
Pharmaceutical  
Phys—Physicians  
Re—Revision  
Ry—Railway  
S—Surgical  
Soc—Society  
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